



# STATE OF NEW YORK DEPARTMENT OF HEALTH

Corning Tower The Governor Nelson A. Rockefeller Empire State Plaza Albany, New York 12237

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*Commissioner Executive Deputy Commissioner*

November 24, 2004

Dear Reader:

I am pleased to provide to you the *First Annual Independent Evaluation of New York's Tobacco Control Program*. The attached document presents a comprehensive review of New York's substantial efforts to improve public health by helping more New Yorkers stop smoking.

The report identifies our many successes, including:

- New York's utilization of a "rigorous strategic plan and emphasis on evidenced-based interventions."
- A decline in New York's per capita cigarette consumption after 2000 that was faster than the national average.
- A steady decline in the rates of second hand smoke exposure both in the home and in the work place.
- Very high compliance (92.9 percent) with the Clean Indoor Air Act.
- An apparent significant reduction of second hand smoke exposure due to the implementation of the CIAA.

The report also contains constructive criticisms of New York's efforts, chiefly, our marketing efforts designed to counter the near limitless marketing resources of the tobacco industry. Prior to the publication of this report the Health Department took actions to improve and better coordinate its media and marketing efforts, which we believe will address this criticism.

As you may know, New York has continuously committed tens of millions of dollars annually to tobacco control, more than almost every other state in the nation. And we maintained our high funding level even during the recent economic downturn, when many other states significantly reduced their tobacco control funding.

As a public health official and a physician, I am gratified to see New York's considerable funding and our aggressive actions, including the historic Clean Indoor Air Act and increased cigarette excise taxes, are measurably curbing tobacco usage and second hand smoke exposure. As the report itself states, it found "several results that suggest that trends in several smoking outcomes were more favorable in New York than the remaining United States." We certainly agree.

Thank you for your interest in this report and in New York's successful tobacco control efforts.

Sincerely,

Antonia C. Novello, M.D., M.P.H., Dr.P.H.  
Commissioner of Health

**November 2004**

# **First Annual Independent Evaluation of New York's Tobacco Control Program**

## **Final Report**

Prepared for

**New York State Department of Health**  
Corning Tower, Room 710  
Albany, NY 12237-0676

Prepared by

**RTI International**  
3040 Cornwallis Road  
Research Triangle Park, NC 27709-2194

RTI Project Number 08800.002

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\*RTI International is a trade name of Research Triangle Institute.

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# Executive Summary

This report is the first annual assessment of New York's Tobacco Control Program (NYTCP) by an independent evaluator pursuant to a statutory requirement contained in the 2000 Health Care Reform Act (§1399-jj). This Executive Summary is a brief synopsis of the full report, which describes the first year's evaluation of the NYTCP and is organized similarly. In Section ES.1 of this Executive Summary, we describe the health and economic burden of tobacco in New York and other relevant context, give a brief history of tobacco control efforts, and describe the current NYTCP. In Section ES.2, we assess the evidence base for the program's strategy and present stakeholder feedback on the program. In Section ES.3, we summarize the approach to the evaluation. In Sections ES.4 and ES.5, we summarize the major findings and conclusions to date from the evaluation of the NYTCP. We refer interested readers to the main body of the full report for more detail on all of the topics presented here.

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## ES.1 TOBACCO CONTROL IN NEW YORK STATE

The existence and continued support of the NYTCP is justified by the enormous health and economic burden of tobacco use in New York:

- Smoking shortens the lifespan of male smokers by an average 13.2 years and female smokers by 14.5 years (CDC, 2002a).
- 25,000 deaths in New York, more than 1 in every 5, are attributable to smoking every year.

- More than 500,000 New York residents currently struggle with smoking-related illnesses (Hyland et al., 2003).
- In 1998 alone, the economic burden of smoking in New York exceeded \$11.7 billion, including
  - \$6.4 billion in direct medical expenditures, and
  - \$5.3 billion in productivity losses.
  - These economic costs average \$9.82 per pack of cigarettes sold.

It is also important to note that the tobacco industry has aggressively promoted tobacco for decades using a variety of methods, such as advertising and promotions, lobbying and political contributions, public relations efforts, sponsorship of sporting events, and smoking in the movies. Despite the 1998 Master Settlement Agreement (MSA) that put limits on industry advertising and promotions, the industry's spending on these activities has continued to increase.

For example, in 2002, the industry spent more than \$12.5 billion on domestic cigarette advertising and promotion, which is \$43 per person in the United States. Assuming this spending is equal across states, the \$12.5 billion translates to \$830 million annually in New York State. That figure dwarfs NYTCP funding of less than \$50 million, with only a portion of that figure going to public awareness and countermarketing campaigns.

Advertising influences values such as social desirability, and tobacco advertisements have used social desirability, seduction, and independence to sell their products. People who perceive that social norms are accepting of smoking and smoking imagery are more likely to be susceptible to tobacco use, especially among youth. As a result, the ads have both obvious and subtle impacts.

Smoking in the movies and television is viewed by some as a "subtle and powerful form of promotion" (Mekemson and Glantz, 2002, p. i81). Some relevant facts to note include the following:

- Smoking has decreased in the United States by approximately half since the 1950s, yet smoking in the movies has not decreased proportionately.
- A recent study found that 80 percent of films showed smoking, including nearly 90 percent of R-rated films, 80 percent of PG-13 films, and 50 percent of G/PG films (Polansky and Glantz, 2004).

Tobacco companies have the financial ability to spend money on public relations and charity activities that influence their public image, portraying them as socially responsible and beneficent. These efforts are aimed at combating their image as an irresponsible or predatory industry. Such attempts can undermine the health messages put forth by antismoking campaigns.

Finally, industry lobbying efforts can also undermine tobacco control efforts by funding front groups that fight tobacco control policies and by influencing politicians behind the scenes to block tobacco control policies (Dearlove and Glantz, 2000).

The success of the NYTCP must be evaluated within this broader context and the amount of funding available for such interventions needs to be put in perspective against the amount of funding available for tobacco industry marketing and promotion.

To address the burden of tobacco, states started investing in tobacco control programs beginning with Minnesota in 1985 and in 1991 in New York when the National Cancer Institute (NCI) initiated the American Stop Smoking Intervention Study (ASSIST). From the past two decades of experience, there is mounting evidence that state-level tobacco prevention and control programs can be effective in reducing tobacco use. In particular, comprehensive or “multifaceted” programs have repeatedly been shown to reduce tobacco use prevalence at the state level (USDHHS, 2000). Some research suggests that there are synergies across program components that produce stronger effects than would be expected by single interventions in isolation (USDHHS, 2000; Wakefield and Chaloupka, 2000).

Comprehensive state programs typically include antitobacco counteradvertising; local-level activities and advocacy; school-based education; cessation programs; and efforts to enact



policies restricting youth access to tobacco products, increasing the price of tobacco products, and restricting smoking in public places. New York's current tobacco control program, which was formed in 2000 as a result of the Health Care Reform Act, follows this type of comprehensive approach.

Farrelly, Pechacek, and Chaloupka (2003) suggest that there is a dose-response relationship between funding and per capita cigarette consumption, but it is not known whether there is a threshold below which new programs cannot have an impact or established programs cannot sustain progress. These findings suggest that New York's investments in tobacco control should lead to declines in tobacco use in time. In addition, although NYTCP funding is small in comparison with tobacco advertising and promotions, the NYTCP has the full range of mass media options to discourage tobacco use, unlike the tobacco industry that is banned from television, radio, and billboard advertising. Hence, relatively smaller investments in tobacco control may have a larger effect (dollar for dollar) on tobacco use than tobacco promotions.

Data from the Campaign for Tobacco-Free Kids on state funding for tobacco control from 2000 to 2004 indicate that NYTCP's average funding ranked 28th among states—therefore, we might expect trends in tobacco use over this time frame to be no better and no worse than other states on average.

The NYTCP has identified six main goals, consisting of four programmatic goals, one infrastructure goal, and one evaluation goal:

*Programmatic Goals:*

1. Eliminate exposure to secondhand smoke.
2. Decrease the social acceptability of tobacco use.
3. Promote cessation from tobacco use.
4. Prevent the initiation of tobacco use among youth and young adults.

*Infrastructure Goal:*

5. Build and maintain effective tobacco control infrastructure.

*Evaluation Goal:*

6. Contribute to the science of tobacco control.

The four programmatic goals will be implemented by following six evidence-based strategies identified by the national Task Force on Community Preventive Services (2001) to prevent and reduce tobacco use:

1. Implement and enforce smoking bans and restrictions.
2. Produce multicomponent mass media campaigns.
3. Initiate telephone support systems, such as the New York Quitline.
4. Promote cessation with health care provider reminders and education.
5. Reduce patient costs for treatments.
6. Increase the cost of tobacco products through cigarette taxes and restrictions on promotions.

In addition, the NYTCP has initiated a planning process that guides the implementation of program activities to accomplish the six goals. Progress toward the established goals is measured in three ways:

1. Establishment of management, accountability, and evaluation processes.
2. Implementation of a formal evaluation system.
3. Identification and tracking/analysis of tobacco use indicators.

The overall administration and direction of the NYTCP is guided by a 17-member Advisory Board that is appointed by New York's Governor, Senate, and Assembly.

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## **ES.2 ASSESSING NEW YORK'S TOBACCO CONTROL PROGRAM**

Although the funding increase in 2000 that resulted from the enactment of the Health Care Reform Act is a positive event for tobacco control in New York, it should be recognized that even under ideal circumstances, funding does not equate instantaneously into capacity to implement effective tobacco control—staff need to be hired to direct and manage the program; strategic plans need to be created; procurements need to be developed, approved, and released; contracts need to be executed; and so on.

With regard to program implementation, we found the following:

- Funding for the program is half of what the Centers for Disease Control and Prevention (CDC) recommends for minimum funding.
- The NYTCP has not expended all available program funds in any year since the program began in 2000 and thus does not have a fully implemented program.
- Cumbersome bureaucratic procedures have prevented the NYTCP from fully implementing its strategic plan (especially in regard to the countermarketing campaign) and establishing contracts with Community Partners, vendors, and other contractors in a timely fashion.

With respect to the NYTCP's strategic plan, we found it to be sensible and well-reasoned. It is grounded in evidence-based interventions and is in keeping with the peer-reviewed literature and federal recommendations.

At this stage of the evaluation, many of the efforts have been focused on enhancing the available outcome data for the program. In terms of process evaluation data, we are developing a Web-based community activity tracking. Because many of these systems are not yet implemented or only recently implemented, our ability to comment on the quality of program implementation is limited.

Finally, stakeholders are pleased that the program now has strong and capable leadership, is grounded on evidence-based interventions, and is investing its funding appropriately. They do note that funding may be insufficient to get the job done. Stakeholders are critical of the ineffective and uncoordinated countermarketing effort and the program's inability to use all of its allocated funding.

With respect to the countermarketing campaign, both the stakeholders and our own review of the existing literature suggest that the program is missing an opportunity to have a large impact on program outcomes by consistently failing to implement media campaigns with messages that elicit strong emotional responses. The stakeholders suggest that the ad approval process leads to ineffective, "low impact" ads.

## **ES.3 INDEPENDENT EVALUATION OF NEW YORK'S TOBACCO CONTROL PROGRAM**

### **ES3.1 Guiding Principles of the Independent Evaluation**

RTI International (RTI) is currently in the second year of a 5-year contract to independently evaluate the NYTCP. In the first year, RTI developed a comprehensive evaluation plan for the NYTCP. Using the CDC's "Framework for Program Evaluation" (1999) as a set of organizing principles, the evaluation is intended to be sensitive to all phases of the NYTCP interventions—from initial design, through implementation, to short-, intermediate-, and long-term outcomes. We want to understand how activities are being conducted and how successful they are in meeting their stated objectives. In addition, because it is often not possible to see changes in ultimate program goals in the short-term, it is necessary to identify upstream indicators of program impact.

Three principles guide RTI's evaluation of the NYTCP:

- Parsimony: Use existing data wherever possible to answer evaluation questions.
- Triangulation: Use multiple data sources and data collection strategies to measure process and outcome measures.
- Comprehensiveness: Address each goal and each logical step toward ultimate program outcomes.

Using these guiding principles, our evaluation strategy for the NYTCP

- tracks the full spectrum of outcomes, from process outcomes, to short-, intermediate-, and long-term outcomes;
- addresses social and environmental factors like pro-tobacco advertising and promotion;
- takes full advantage of existing data sources, such as the Adult Tobacco Survey (ATS), the Behavioral Risk Factor Surveillance System (BRFSS) surveys, and the Youth Tobacco Survey (YTS); and
- ensures that all data required for a complete evaluation are available by proposing new data collection systems that complement existing data sources.

### ES3.2 Data Collection Activities

CDC's evaluation framework outlines the steps in developing and implementing an evaluation. The first step is to engage program "stakeholders." These are people who are knowledgeable about the program and have a strong interest in its effective implementation. The second step involves describing the program. To accomplish this, RTI reviewed the NYTCP's strategic plan, met with NYTCP staff in-person and by telephone, and reviewed relevant program documents. Based on this understanding, we mapped programmatic goals and objectives to program activities and outputs to short-, intermediate-, and long-term indicators. We then designed data collection systems to gather the relevant data. These included the following:

- **The Adult Tobacco Survey.** The purpose of the ATS is to monitor progress toward program goals by measuring tobacco use behaviors, attitudes, and related influences on tobacco use.
- **Program Monitoring and Activity Reporting.** We are developing a Web-based program activity reporting system to document Community Partner activities.
- **News Media Tracking.** To track the extent of news media coverage of NYTCP efforts and the coverage of tobacco topics more generally, we gather and code tobacco-related news clippings.
- **Health Care Provider and Provider Organization Surveys.** To evaluate forthcoming regional Cessation Center efforts, we have designed and will soon implement surveys of health care providers' knowledge, attitudes, intentions, and practices as they relate to addressing tobacco and health care provider organizations' systems and policies for promoting cessation.
- **Youth Telephone Survey with Longitudinal Follow-ups.** To complement the current school-based Youth Tobacco Survey, we are in the process of developing and implementing a longitudinal, telephone survey that provides information on youth's transitions from never smoking, to experimenting, to becoming regular smokers and the factors that influence these transitions.
- **Community Sentinel Site Study.** To understand the context within which local tobacco initiatives are being

implemented, RTI is developing and implementing a 4-year case study in collaboration with NYTCP staff.

- **Observational Studies of Compliance with the Clean Indoor Air Act (CIAA).** To monitor compliance with the CIAA, the NYTCP has worked with Community Partners to directly observe compliance in restaurants, bars, and bowling facilities prior to and following implementation of the new law in July 2003.
- **Employee Health Study.** To assess the impact of New York's law on exposure to secondhand smoke among current employees of restaurants, bars, or bowling facilities, RTI conducted a brief telephone survey of and obtained saliva specimens from a cohort of such workers prior to implementation of the law and at 3, 6, and 12 months after the law went into effect.
- **Measuring Pro-Tobacco Advertising and Promotions in the Retail Environment.** Goal 2 stresses the importance of reducing the amount of pro-tobacco promotions and advertising and calls for Community Partners to perform local assessments of the extent of such activities. RTI has developed a system to systematically collect data throughout New York State on tobacco advertising and promotions in the stores of licensed tobacco vendors. RTI will coordinate and implement this system with the assistance of the 29 Tobacco Control Community Partnerships.

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## **ES.4 SUMMARY OF EVALUATION FINDINGS**

### **ES4.1 Program Implementation**

- The NYTCP should be commended for its rigorous strategic plan and emphasis on evidence-based interventions, which are in keeping with the peer-reviewed literature and federal recommendations.
- The NYTCP has not expended all available program funds in any year since the program began in 2000 and thus does not have a fully implemented program. Cumbersome bureaucratic procedures have prevented the NYTCP from fully implementing its strategic plan (especially in regard to the countermarketing campaign) and establishing contracts with Community Partners, vendors, and other contractors in a timely fashion.
- At this stage of the evaluation, many of the efforts have been focused on enhancing the available outcome data for the program. In terms of process evaluation data, we are developing a Web-based community activity tracking. Because many of these systems are not yet

implemented or only recently implemented, our ability to comment on the quality of program implementation is limited.

- Funding for the program is half of what the CDC recommends for minimum funding. Funding falls far short of the tobacco industry's \$830 million advertising and promotions expenditures.
- Stakeholders are pleased that the program now has strong and capable leadership, is grounded on evidence-based interventions, and is investing its funding appropriately. Stakeholders are critical of the ineffective and uncoordinated countermarketing effort and the program's inability to use all of its allocated funding.

#### **ES4.2 Program Effectiveness**

Below, we present a concise summary of our main findings. More detailed results are presented in the main report.

We conducted a number of analyses with the purpose of understanding whether the NYTCP had an impact on tobacco use knowledge, attitudes, and behaviors in the period from 2000 through 2002 compared with the rest of the United States. This approach permits a comparison between New York and the average state. Because comparison data from other states were only available through 2002 for most measures, our comparisons are limited to this time frame. We will update these analyses as more recent data become available.

Because it takes time to convert financial resources into effective tobacco control capacity, we did not expect to find evidence that the program's efforts had an impact on most outcomes through 2002. Nonetheless, we did find several results that suggest that trends in several smoking outcomes were more favorable in New York than in the remaining United States.

##### ***Cigarette Consumption and Prevalence of Smoking***

- Declines in per capita cigarette sales accelerated in New York after 2000 compared with the rest of the United States. However, some of the decline in sales is due to tax evasion or avoidance that occurs through purchasing in neighboring states, American Indian reservations, the Internet, or duty-free shops. According to the ATS, purchasing in such locations is commonplace—in the past year, 58 percent of smokers reported buying from

sources that would not be reflected in tax-paid sales. This ranged from a high of 88 percent in the Buffalo area to a low of 42 percent in the Hudson Valley area.

- The acceleration of declines in sales was due in large part to cigarette excise tax increases in New York City and State. The decline in sales represents both an increase in tax avoidance and declines in consumption.
- Accounting for tax evasion, cigarette consumption would have been 52 percent higher in 2003 had taxes not increased in New York State and New York City from 2000 to 2003.
- The prevalence of smoking among adults was 1.3 percentage points lower in 2002 than it would have been in the absence of the 2000 excise tax increase, translating to approximately 188,000 fewer smokers.
- Analyses focusing on cessation behaviors show an increase in the percentage of New York smokers who quit for 6 months or longer compared with the rest of the United States. Consistent with the findings noted above, there was a positive relationship between increases in cigarette taxes and quitting, but the correlation was not statistically significant.
- From 2000 to 2002, tobacco use among New York youth declined at rates similar to the rest of the country.

### ***Exposure to Secondhand Smoke***

- Exposure to secondhand smoke in the home and in workplaces declined steadily from 1992 through 2002, although the rate of decline in exposure is similar between New York and the remaining United States.
- Despite the passage of the comprehensive CIAA, 10 percent of workers continue to report observing smoking in their workplace.

### ***Clean Indoor Air Act***

- Restaurants, bars, and bowling facilities quickly complied with New York's CIAA within 1 month of implementation. Compliance in bars and bingo halls, although dramatically improved, lags behind the other venues.
- These results were confirmed by findings from the ATS, an air monitoring study in Western New York, and a study of hospitality workers.
- Based on findings from the ATS, the majority of New Yorkers, smokers and nonsmokers alike, reported little



or no change in patronage of bars and restaurants in response to the CIAA.

- Hospitality industry employment, alcohol excise tax revenues, and bar licenses all appear to have suffered no adverse effects as a result of the CIAA.
- Support for New York's CIAA is growing over time and is considerably higher than what one would have predicted from data from 1992 to 2002. Support for the law increased from 64 percent of New Yorkers saying they were in favor of the law in the period from June to September 2003 to 74 percent in the second quarter of 2004.

### ***Home Restrictions on Smoking***

- The prevalence of households with smoke-free homes increased substantially from 1992 to 2004, from 37 percent to 69 percent. The rate of increase in New York State was no faster than that in the remaining United States.

### ***Knowledge and Attitudes about Tobacco***

- More than three-quarters of adult New York smokers agree that smokers' risk of lung cancer is higher than for nonsmokers, but the analogous statistics for other cancers is only 50 percent. In addition, 62 percent agree that smokers' risk of heart disease is higher than that of nonsmokers.
- Twenty-nine percent of New Yorkers agree (incorrectly) that there is little benefit to quitting for smokers who have smoked a pack a day for 20 years.
- A significant number of smokers have misconceptions about light cigarettes and the dangers of nicotine.
- An impressive 97 percent of New York youth recognize the dangers of smoking.
- A majority of New Yorkers are in favor of eliminating the amount of smoking in movies, especially movies rated G, PG, or PG-13.

### ***Awareness of Antismoking Messages***

- The majority of New York adults recall seeing or hearing a wide range of antitobacco messages in the past month.
- Only one-third of New Yorkers recall seeing one of the eight NYTCP-sponsored advertisements that aired in the second quarter of 2004. Those who saw any of these advertisements had favorable reactions to them.

- Nearly half of students at all grade levels report seeing or hearing antitobacco messages almost daily or more.

### ***Awareness of Pro-Tobacco Messages***

- Marketing and promotional efforts by tobacco companies are widespread and reach a substantial proportion of adults and youth in New York.
- Even though the MSA is supposed to restrain youth-oriented tobacco marketing, youth are nonetheless bombarded with smoking advertising, marketing, and imagery.

### ***Smoking Cessation and Awareness of the New York Quitline***

- Our results highlight the difficulty of maintaining quit attempts (succeeding); for example, according to the ATS, although approximately 46 percent of smokers made a quit attempt, fewer than 14 percent maintained a quit attempt for 6 months or more.
- It is also evident that substantial numbers of smokers want to quit: ATS data indicate that 58 percent of smokers plan to quit in the next 6 months and 24 percent plan to quit in the next 30 days. Unfortunately, few succeed.
- Twenty-two percent reported using a nicotine patch, nicotine gum, or some other medication as a cessation method—an evidence-based strategy.
- Many smokers used methods for quitting that are not effective or not effective unless paired with counseling or nicotine replacement therapies (NRT):
  - More than 8 in 10 smokers and former smokers reported quitting all at once as a cessation strategy.
  - Forty-one percent reported cutting back.
  - Eleven percent reported switching to light cigarettes, which provides no health benefits and is not an evidence-based strategy for quitting.
- Approximately 57 percent of current smokers and approximately 45 percent of all adults have heard of the New York Quitline. Use of the Quitline is considerably lower (in the 3 to 6 percent range). Television is the most common medium through which adults have heard of the Quitline.
- Seventy-one percent of smokers who had visited a doctor, nurse, or other health professional in the past year reported that the health provider advised them to

quit. Because only 62 percent of smokers visited a health provider in the past year, this translates to only 44 percent of smokers being advised to quit.

***Youth Smoking and Adolescent Tobacco Use Prevention Act Enforcement***

- Despite several years of increased enforcement activity, New York youth are no more likely than youth in the rest of the United States to be asked for an ID while purchasing cigarettes or to be refused cigarettes because of age.
- Current levels of enforcement for the Adolescent Tobacco Use Prevention Act (ATUPA) may not be sufficient to bring about meaningful declines in the prevalence of youth smoking.

Our evaluation to date has accomplished three main tasks. We established a baseline with the development of new surveillance and evaluation systems that will permit a stronger and more comprehensive evaluation next year. This baseline highlighted gaps in knowledge and areas where greater efforts are needed to promote awareness of program efforts. In addition, by partnering with Roswell Park Cancer Institute and cooperating with the NYTCP, we have successfully completed a comprehensive evaluation of the statewide CIAA that demonstrated that the law was implemented quickly and had its intended effects with no adverse effects on business noted to date. Finally, we examined changes in tobacco use indicators during the first 2 years of the program compared with the rest of the United States. As we noted earlier, given the time it takes to build effective capacity, we did not expect New York to outperform the rest of the United States. We found some evidence that tobacco use declined faster in New York by some measures than the rest of the United States and that these changes were attributable to increases in cigarette excise taxes. We also noted that the program's efforts to decrease the social acceptability of tobacco may be responsible for creating an environment where increases in cigarette taxes garner public support. Hence, some of the declines in New York are fairly attributable to the program although it is difficult to precisely measure its effect.

## **ES.5 MAJOR CONCLUSIONS**

### **ES5.1 Media and Countermarketing**

Applying best practices to media and countermarketing campaigns is essential to change attitudes about tobacco and prevent and reduce tobacco use. Countermarketing efforts should include messages consistent with best practices and should be planned far enough in advance to permit coordination with other program efforts. Specifically, campaigns should be built around effective ads that will reach and resonate with target audiences and change attitudes and behaviors. In order to be effective, campaigns must be integrated with program interventions and coordinated with policy change efforts. The evidence supports countermarketing efforts only when they are combined with other interventions.

We note that the program is missing an opportunity to have a large impact on program outcomes by failing to consistently implement media campaigns (1) with messages that elicit strong emotional responses among the target audiences; and (2) that support, reinforce, and extend programmatic activities (such as CIAA implementation). To maximize the impact of the mass media campaign, the program should develop and implement a long-term media campaign strategy that aligns media messages with the goals and objectives of the program. Such a plan should articulate message “platforms” that are designed to coordinate with other aspects of the program, such as advertisements that support the CIAA and encourage more restrictions on smoking in the home, ads that are salient to youth and young adults and discourage the uptake of smoking, and ads that motivate current smokers to try to quit. Longer-term planning for media and countermarketing efforts will also aid the evaluation because it will permit us to modify the ATS and other surveys to include knowledge and attitude questions that are consistent with the targeted media messages.

Moving forward, the NYTCP should implement media campaigns that are consistent with best practices and coordinated with other interventions and policy changes. In addition, the program should make use of more effective messages and

should consider contracting with an advertising agency with a track record of producing high impact advertisements.

### **ES5.2 Countering Tobacco Industry Advertising and Promotion**

Youth and adults in New York are bombarded with tobacco company advertising and promotion as a result of a \$830 million per year campaign. Our findings indicate that youth and adults are receiving and are receptive to these advertisements and promotions, and they are having their intended effect of normalizing and promoting tobacco use.

Our findings suggest that the program redouble its efforts to effectively counter ubiquitous tobacco marketing and promotions, including combating the influence of smoking in the movies, and to correct gaps in knowledge and attitudes related to the dangers of smoking, the benefits of quitting and effective quitting strategies, and the role of nicotine in smoking and in quitting. To do this, the program must invest more aggressively in effective countermarketing, community education, and specific interventions to reduce, eliminate, or otherwise address tobacco company marketing efforts.

### **ES5.3 Clean Indoor Air**

With the enactment of a comprehensive clean indoor air law, and high compliance with and strong public support for the law, future programmatic efforts to eliminate exposure to secondhand smoke should focus on educating New Yorkers about the dangers of secondhand smoke to promote voluntary restrictions on smoking in homes and cars. Media and countermarketing efforts will be important to promote these restrictions and to increase New Yorkers' understanding of the health risks associated with exposure to secondhand smoke. Our data suggest that New Yorkers do not fully understand all of the risks associated with exposure to secondhand smoke, especially the risk of heart disease and sudden infant death.

Future evaluation of the public health impact of the CIAA should focus on identifying the workplaces where 10 percent of workers continue to be exposed to secondhand smoke. As additional data become available, analyses should be undertaken to determine the impact of the law on longer-term health outcomes, such as acute myocardial infarctions, and to

settle the issue of the economic impact of the law. Finally, we need to complete our research by examining sales tax data to more fully understand the impact of the CIAA on businesses that may be potentially affected (positively or negatively), such as bars and restaurants.

#### **ES5.4 Cessation and the Quitline**

Our findings identified clear gaps in smokers' knowledge about effective cessation strategies and noted the low rate of successful cessation among those who attempt to quit. The program will need to educate smokers about their cigarettes and provide information and resources for quitting successfully.

The program has put in place interventions to promote evidence-based treatment of tobacco dependence and support successful cessation. We will monitor these interventions closely to assess their impact and identify opportunities for improvement. In particular, program efforts to expand the availability of free NRT, both through the Quitline and by promoting health insurance coverage of tobacco dependence treatment; efforts to better inform smokers about the need to quit and about effective cessation strategies through compelling media messages; and efforts to engage the health care industry in meeting its responsibility to diagnose and treat tobacco dependence will be important to boost the quit rate and reduce the prevalence of smoking.

#### **ES5.5 Enforcement**

Although the enforcement program has steadily increased the tobacco retailer compliance rate with respect to sales to minors, the current levels of enforcement fall far short of what is needed to reduce access to cigarettes and curb youth smoking. However, in light of the evidence base, we do not recommend increasing funding for enforcement. Given the statutory requirement to "direct the most efficient allocation of state resources. . . to accomplish the maximum prevention and reduction of tobacco use among minors and adults," we cannot support additional investment in enforcement activities.

# 1

## Overview and Purpose

This report is the first annual assessment of New York's Tobacco Control Program (NYTCP) by an independent evaluator pursuant to a statutory requirement contained in the 2000 Health Care Reform Act (§1399-jj). Following a competitive process, RTI International (RTI), teamed with Roswell Park Cancer Institute (Roswell Park) and Columbia University, was selected to conduct a 5-year independent evaluation of the NYTCP. The evaluation began on March 31, 2003, when the contract was fully executed. The specific requirements of §1399-jj are as follows:

1. The commissioner shall evaluate the effectiveness of the efforts by state and local governments to reduce the use of tobacco products among minors and adults. The principal measurements of effectiveness shall include negative attitudes toward tobacco use and reduction of tobacco use among the general population, and given target populations.
2. The commissioner shall ensure that, to the extent practicable, the most current research findings regarding mechanisms to reduce and change attitudes toward tobacco use are used in tobacco education programs administered by the department.
3. To diminish tobacco use among minors and adults, the commissioner shall ensure that, to the extent practicable, the following is achieved: The department shall conduct an independent evaluation of the statewide tobacco use prevention and control program under §1399-ii of this article. The purpose of this evaluation is to direct the most efficient allocation of state resources devoted to tobacco education and cessation to accomplish the maximum prevention and reduction of tobacco use among minors and adults. Such evaluation

shall be provided to the governor, the majority leader of the senate, and the speaker of the assembly on or before September 1, 2001, and annually on or before such date thereafter. The comprehensive evaluation design shall be guided by the following: (a) sound evaluation principles including, to the extent feasible, elements of controlled experimental methods; (b) an evaluation of the comparative effectiveness of individual program designs, which shall be used in funding decisions and program modifications; and (c) an evaluation of other programs identified by state agencies, local lead agencies, and federal agencies.

As described in Chapter 5, RTI's comprehensive program evaluation is built on sound evaluation principles and best practices for tobacco control research. It is designed and implemented to speak to the effectiveness of individual program components to the extent possible and therefore address point 3(b) from §1399-jj—an evaluation of comparative effectiveness of individual program designs. Following Centers for Disease Control and Prevention (CDC) and other Best Practice guidelines, the program has taken a comprehensive approach to tobacco control by building on individual evidence-based strategies. Inherent in a comprehensive design is an expectation that there are synergies that exist across program interventions. As a result, it is difficult to precisely and reliably measure the effectiveness of individual interventions.

This report has three broad aims: (1) assess the strengths and weaknesses of the program's strategic approach to reducing the health and economic burden of tobacco in New York State (Chapter 4), (2) provide an overview of the status of the evaluation (Chapter 5), and (3) evaluate the program's progress toward stated program goals with the available surveillance and evaluation data (Chapter 6). Before addressing these three broad aims, we briefly describe the health and economic burden of tobacco in New York State to provide a context for this report (Chapter 2).



# 2

## The Burden of Tobacco in New York State

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### 2.1 HEALTH CONSEQUENCES

Tobacco use is the leading cause of preventable deaths in the United States, taking more than 440,000 lives prematurely every year. There is no safe cigarette, and smoking at any level has negative impacts on people at all stages of life. In the recent report *The Health Consequences of Smoking*, the U.S. Surgeon General clearly states that smoking harms nearly every organ of the body and causes major diseases and reduces the health of smokers in general (USDHHS, 2004). More specifically, smoking shortens the lifespan of male smokers by an average 13.2 years and female smokers by 14.5 years (CDC, 2002a).

New York-specific estimates show that 25,000 of all deaths in New York are attributable to smoking every year (CDC, 2002b). This implies that more than 1 out of every 5 deaths is caused by smoking. In fact, it is estimated that nearly 440,000 of New York's youth are likely to struggle with smoking-related illnesses at some point in the future and die prematurely from smoking (CFTFK, 2004). In addition, more than 500,000 New York residents currently struggle with smoking-related illnesses (Hyland et al., 2003). The true extent of smoking-related illnesses is likely higher based on the evidence summarized in the recent Surgeon General report that smoking is related to many more illnesses than was previously known (USDHHS, 2004).

## **2.2 ECONOMIC BURDEN**

Tobacco use causes not only immense human suffering but also creates a substantial economic burden on the individual, the state, employers, and the federal government. In 1998 alone, the total economic burden of smoking in New York exceeded \$11.7 billion (CDC, 2002b). Of this amount, \$6.4 billion was attributed to direct medical expenditures and the remaining \$5.3 billion was attributable to productivity losses. The direct cost to New York State, local governments, and the federal government came to more than \$4.2 billion in Medicaid expenditures, or an average cost of \$3.61 per pack of cigarettes sold for Medicaid expenditures to treat smoking-related illnesses alone.

The total cost of smoking, taking both medical expenditures and productivity losses into account, is \$9.82 per pack ( $[\text{medical} + \text{productivity}]/\text{total packs}$ ). In comparison, in 1998, total excise taxes for New York State and the federal government combined only came to \$0.80 per pack. Even with recent tax increases, the total state and federal tax per pack of cigarettes in New York State only comes to \$1.89 (\$3.39 in New York City) in 2004, which is \$7.93 per pack less than the full cost of smoking to New Yorkers.

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## **2.3 SOCIAL CAUSES OF SMOKING**

The tobacco industry has a deep-rooted history that plays a significant part in setting the context for tobacco control efforts in New York State. The influence of smoking and the tobacco industry takes many forms, including industry advertising and promotions, lobbying and political contributions, public relations efforts, and smoking in the movies. Although the NYTCP is using tobacco use-related measures to establish baselines and set goals and objectives, it is important to be acutely aware of the pro-tobacco activities that impact those measures. For example, enormous tobacco industry advertising and promotion budgets are on the rise, dwarfing the budgets of tobacco control programs. The following sections discuss the history of tobacco industry advertising and influence, recent trends in advertising and promotion, smoking in the movies, and other forms of tobacco industry influence and describe ways in which

this information can be applied to the NYTCP's goals and strategies.

### **2.3.1 History**

Tobacco use has become pervasive and normative in the United States through a long history of tobacco promotion. Tobacco advertisements appeared on television and radio until the broadcast advertising ban took effect in 1971. Advertisements in the 1960s showed doctors as smokers, with an underlying message that promoted smoking, linking smoking and health in a positive way. Celebrities were featured in cigarette ads, including actors and singers, mentioning that they smoke to protect their voices. Athletes were also shown in cigarette ads, implying associations linking sports, health, and smoking. Other promotions allowed smokers to collect points and "cash" from each pack of cigarettes to be redeemed for prizes.

Historically, the promotion of tobacco was very direct, from giveaways to paid promotion through events and movies during times when policies restricting tobacco use were few. Tobacco companies paid movie studios and movie stars to use their products in films, and they sponsored sporting events such as the Virginia Slims Women's Legends Tour and the Winston Cup. In addition, free cigarettes were distributed to American soldiers during World War II, and smoking was allowed in hospitals, airports, restaurants, and workplaces.

Smoking has appeared in movies via paid product placement, the provision of free products as props, or personal use by actors. Product placement takes into consideration the use of brand placement in positive ways, specifically avoiding the negative exposure of brands. Another practice was providing free cigarettes to celebrities. Product placement includes major and minor appearances, more than just cigarette packs, with objects ranging from billboards, shirts, trucks, antique signs, ashtrays, lighters, and other items with logos. Some cigarette companies paid actors to commit to using their product in multiple films. There has been a voluntary ban against this since 1990, when cigarette companies modified the voluntary Cigarette Advertising and Promotion code to prohibit paid product placement (Mekemson and Glantz, 2002). Although

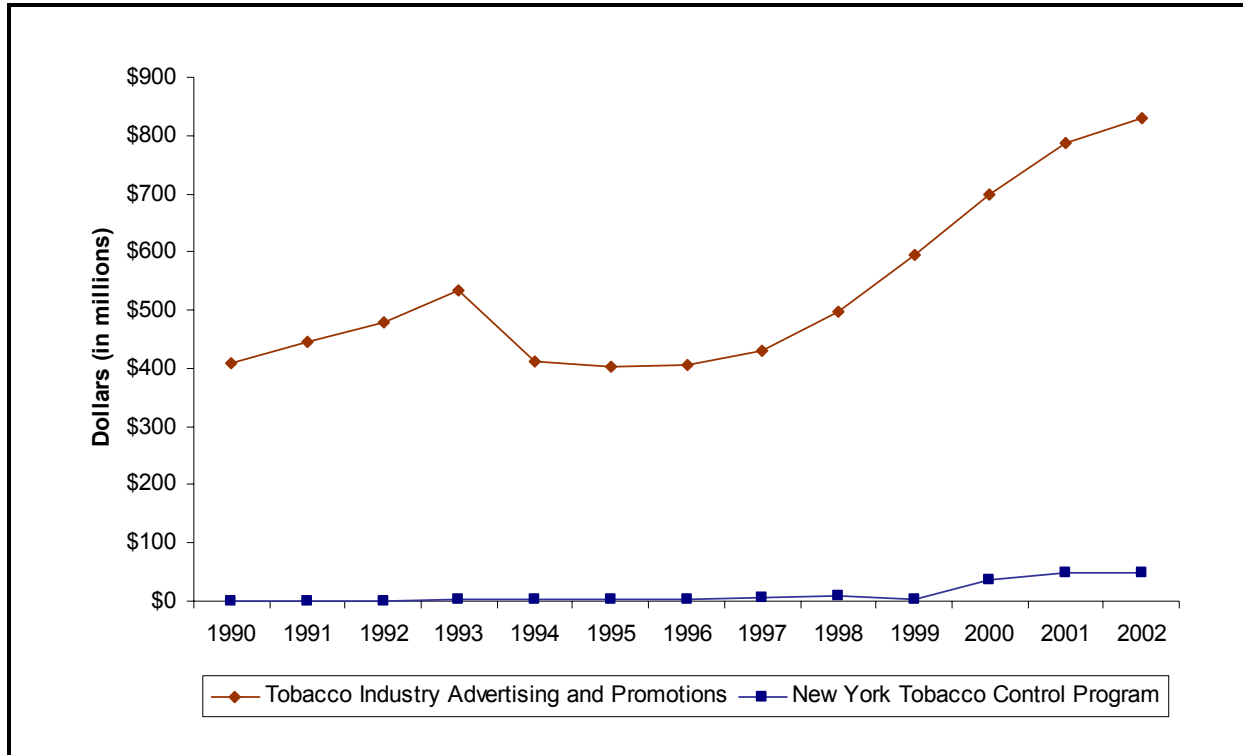
there has been an increasing number of limitations on the influence of tobacco and the tobacco industry in recent years, decades of promotions, advertising, and other efforts have established smoking as a culturally ubiquitous force, linked to sports events, celebrities, and perceptions of stress relief, seduction, and popularity.

A major event in the tobacco control landscape was the 1998 Master Settlement Agreement (MSA)—an unprecedented agreement signed by seven major tobacco companies and the attorneys general of 46 states, establishing limits on tobacco product marketing and paying the states \$206 billion. However, despite the greater restrictions on the tobacco industry, we present data below that indicate that the amount of money spent on advertising and promotion has continued to increase.

### **2.3.2 Recent Trends in Tobacco Industry Advertising and Promotion**

The tobacco industry spent \$12.5 billion on domestic cigarette advertising and promotion in 2001, which is more than \$43 per person in the United States, based on 2002 U.S. Census population figures. Approximating the tobacco industry's expenditures for the state of New York, given that the 2001 population of New York was 6.7 percent of the nation's population, the tobacco industry spends \$830 million annually in New York State. NYTCP funding is less than \$50 million, with only a portion of that figure going to public awareness and countermarketing campaigns. Tobacco control program total dollars spent in New York equal less than \$3 per person. This fundamental discrepancy in resources is a significant barrier to antismoking efforts. The ratio of spending on tobacco industry advertising and promotion to the state tobacco control program is 17 to 1.

**Exhibit 2-1** shows the money spent in New York from 1990 to 2002 on tobacco industry advertising and promotion compared with funding for the NYTCP. The NYTCP budget has increased significantly, but the gap between the two funding levels is wide and continuing to grow. Although the MSA put limits on the type of advertising and promotional activities tobacco

**Exhibit 2-1. Inflation-Adjusted Tobacco Control Program Funding and Tobacco Industry Advertising and Promotional Expenditures in New York**

companies can utilize, total domestic cigarette advertising and promotional expenditures have continued to grow significantly since the 1998 MSA. Promotional allowances (including payments to retailers for shelf space), coupons, and retail value promotions (multiple pack promotions and noncigarette items) have accounted for the greatest percentages of advertising and promotional expenditures, with the total amount of spending increasing significantly.

Advertising influences values such as social desirability, and tobacco advertisements have used social desirability, seduction, and independence to sell their products. People who perceive that social norms are accepting of smoking and smoking imagery are more likely to be susceptible to tobacco use, especially among youth. As a result, the ads have both obvious and subtle impacts.

Advertisements are effective in creating acceptance of a particular brand image. The brands most heavily advertised

are the brands used most. Having tobacco-related promotional items has been linked to susceptibility to smoking, especially among youth.

### **2.3.3 Smoking in Movies**

Although tobacco use in the population has declined since the 1950s and paid product placement was banned voluntarily, tobacco use in movies has not proportionately decreased. This results in an unrealistic portrayal of smoking prevalence in the United States through popular movies. Smoking has decreased in the United States by approximately half, yet films show the same amount of smoking as in the 1950s. Smoking is more prevalent in movies than in the population. Youth are more susceptible to smoking when they perceive that more people around them smoke, and movies have the potential to affect youth perceptions and influence initiation. Indeed, smoking in the movies and television is viewed by some as “a subtle and powerful form of promotion” (Mekemson and Glantz, 2002, p. i81).

Portraying smoking as normative can lead to a neutral or tolerant attitude toward tobacco use. A study that compared smoking instances in U.S. films from 1999 to 2003 found that 80 percent of films showed smoking, including nearly 90 percent of R-rated films, 80 percent of PG-13 films, and 50 percent of G/PG movies (Polansky and Glantz, 2004).

In addition to the impact of pervasive smoking in movies on norms, attitudes, and behaviors, there is an added impact when popular celebrities smoke. When youth see celebrities smoking, it can significantly affect their attitudes and behaviors. Tobacco industry documents reveal that the industry has long been aware of the impact of product placement in their favor: “Association with a specific star’s image can enhance/build a brand’s personality—more than traditional media” (Brown and Williamson, cited in Mekemson and Glantz, 2002, p. i85). In addition, Tickle et al. (2001) found that adolescents whose favorite movie stars use tobacco on-screen are significantly more likely to smoke and have pro-smoking attitudes than adolescents who prefer nonsmoking stars. This relationship is strong, independent of other factors

known to be predictors of adolescent smoking. This may be related to the strong salience of movie stars to this age group and the effect of social learning and socialization by mass media. Even if the amount of smoking in movies does decrease immediately, the fact that people watch DVDs and videos of older and current movies means that this effect will be present for some time to come (Mekemson and Glantz, 2002).

#### **2.3.4 Other Forms of Tobacco Industry Influence**

Tobacco companies have the financial ability to spend money on public relations and charity activities that influence their public image, portraying them as socially responsible and beneficent. In addition, the tobacco industry has made large political contributions in New York State to individuals, specific campaigns, and committees and has participated in significant lobbying activities.

National public relations efforts to enhance the reputations of tobacco companies create images of social responsibility that seem inconsistent with perceptions of the tobacco industry as irresponsible or predatory and thus undermine the health messages put forth by antismoking campaigns. Lobbying efforts can also undermine tobacco control efforts by influencing politicians behind the scenes to overturn tobacco control policies and/or to prevent them from being passed (Dearlove and Glantz, 2000). Both of these types of influence should be considered when evaluating the NYTCP.

#### **2.3.5 Conclusions**

The NYTCP's goals clearly account for some tobacco industry influence on smoking rates, and future efforts must continue to incorporate an understanding of pro-tobacco activities, both obvious and subtle. The tobacco industry has a strong presence in New York, and they are rooted in a stable history of influencing economics and politics. They have had ubiquitous advertisements and promotions, frequent event sponsorships, movie exposure of tobacco brands and products, and political involvement in lobbying and contributions. Tobacco control efforts have a lot to overcome to make a positive impact on public health against such formidable opposition.

The increase in point-of-purchase advertising and the influence of smoking in the movies is being addressed by the NYTCP's community mobilization efforts. As we move forward with the evaluation of these and other efforts, it is important to understand the external factors that can influence measures of program progress. Short- and long-term objectives are measured using variables that may be affected by the history and current efforts of the tobacco industry, including advertisements and sponsorships.

New York efforts to increase the unit price of tobacco products must take into account that the amount smokers pay is affected by promotions and discounts. As the NYTCP aims to reduce the number of retailers that post point-of-purchase advertising, the fact that such advertisements and promotions bring income to stores must be understood. As the countermarketing campaign is evaluated, it is important to recognize the impact of the well-funded pro-tobacco campaign, especially corporate sponsorships and in point-of-purchase and magazine advertisements.

The tobacco industry pushes for legitimization through public relations and regulation, which must be taken into account when educating youth and adults about the manipulative and deceptive marketing practices of the tobacco industry. They also often push for individual choice rather than policy change, which is important to consider when working on tobacco-free school policies, CIAA challenges, and other issues.

One of the NYTCP's interventions is to implement multicomponent mass media campaigns to counter pro-tobacco messages. The amount of funding available for such interventions needs to be put in perspective against the amount of funding available for tobacco industry marketing and promotion.

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## **2.4 INVESTING IN TOBACCO CONTROL TO CURB THE BURDEN OF TOBACCO**

To address the burden of tobacco, states started investing in tobacco control programs beginning with Minnesota in 1985. In the wake of the success of California's tobacco control program



that began in 1989, state and federal programs began to make systematic investments in tobacco control. As a result of these experiences, there is mounting evidence that state-level tobacco prevention and control programs can be effective in reducing tobacco use. In particular, comprehensive or “multifaceted” programs have repeatedly been shown to reduce tobacco use prevalence at the state level (USDHHS, 2000). Comprehensive state programs typically include antitobacco counteradvertising; local-level activities and advocacy; school-based education; cessation programs; and efforts to enact policies restricting youth access to tobacco products, increasing the price of tobacco products, and restricting smoking in public places. In addition, more than 20 states have included efforts designed to empower youth as advocates and change agents (Farrelly, Niederdeppe, and Yarsevich, 2003).

Well-funded state programs have been associated with decreases in total, per capita, and average daily consumption of tobacco (Farrelly, Pechacek, and Chaloupka, 2003; Stillman et al., 2003; Manley et al., 1997; Fichtenberg and Glantz, 2002; Biener, Harris, and Hamilton, 2000; Glantz, 1993; Hu et al., 1995a,b; CDC, 1996, 1999; Pierce et al., 1998; Elder et al., 1996). Similarly, significant program effects of comprehensive state programs have been seen on both adult smoking prevalence (Stillman et al., 2003; Rohrbach et al., 2002; Fichtenberg and Glantz, 2002; Weintraub and Hamilton, 2002; Biener, Harris, and Hamilton, 2000; CDC, 1996, 2001; Pierce et al., 1998) and youth smoking prevalence (Rohrbach et al., 2002; Soldz et al., 2002; Sly, Heald, and Ray, 2001; Bauer et al., 2000; Siegel and Biener, 2000; Farrelly, Niederdeppe, and Yarsevich, 2003).

Some research suggests that there are synergies across program components that produce stronger effects than would be expected by the additive contributions of the individual components (USDHHS, 2000; Wakefield and Chaloupka, 2000).

Finally, Farrelly, Pechacek, and Chaloupka (2003) suggest that there is a dose-response relationship between funding and per capita cigarette consumption, but it is not known whether there is a threshold below which new programs cannot have an impact or established programs cannot sustain progress. These

findings are consistent with California's experience where there was an associated rate of decline in consumption that was 50 percent more rapid than experienced in the rest of the country from 1989 to 1993 (Pierce et al., 1998). In fiscal year 1993–1994, there was a significant reduction of 40 percent in program funding. After 1993, the rate of decline in per capita consumption slowed to less than one-third of the rate observed from 1989 through 1993 (Pierce et al., 1998).

As Exhibit 2-1 indicates above, funding for the NYTCP is small in comparison with tobacco advertising and promotions. However, because tobacco control programs can use the full range of mass media options to discourage tobacco use, relatively smaller investments in tobacco control may have a larger effect (dollar for dollar) on tobacco use than tobacco promotions. Data from the Campaign for Tobacco-Free Kids on state funding for tobacco control from 2000–2004 indicate that NYTCP's average funding ranked 28th among states—therefore, we might expect trends in tobacco use over this time frame to be no better and no worse than other states on average.

# 3

## Tobacco Control in New York State

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### **3.1 BRIEF HISTORY OF TOBACCO CONTROL IN NEW YORK**

Organized efforts by the New York State Department of Health (NYSDOH) to prevent and reduce tobacco use began in earnest in 1991 when the National Cancer Institute (NCI) initiated the American Stop Smoking Intervention Study (ASSIST). Through Project ASSIST, NCI funded 17 state departments of health, including New York's, to develop and support community partners to act locally to increase pro-tobacco control media coverage, strengthen support for local and state clean indoor air (CIA) laws, reduce accessibility of tobacco products to youth, limit tobacco advertising and promotion, increase excise taxes on tobacco products, and increase demand for cessation. New York State participated in Project ASSIST from 1991 to 1998 and received \$0.6 to \$2.3 million per year from NCI, the predominant funding source for the NYSDOH tobacco use prevention program until 1997.

The focus on local community coalitions proved effective, as evidenced by the many local CIA policies implemented beginning in 1994 in individual New York counties, as well as other successful local policy initiatives targeting product placement, self-service or herbal cigarette restrictions, and tobacco company advertising restrictions. Although the state had passed a CIA law in 1989 and strengthened the law in 1994 to completely restrict smoking in educational institutions, by 2002 more than 77 percent of New York's population lived in jurisdictions governed by local CIA laws that provided more protection than the state law.

**History of Tobacco Control in New York**

- 1989: CIA law passed
- 1991: Project ASSIST
- 1992: Adolescent Tobacco Use Prevention Act enacted
- 1994: CIA law strengthened to restrict smoking in educational institutions
- 1997: Youth Tobacco Prevention and Enforcement Program established
- 1998: Master Settlement Agreement
- 1999: CDC's NTCP initiated; NYSDOH awarded 5-year, \$10 million grant
- 2000: Enactment of Health Care Reform Act creating comprehensive tobacco control program at \$40 million per year
- 2000: American Legacy Foundation awarded 3-year, \$3 million grant to NYSDOH
- 2000: New York's Fire-Safe Cigarette Law passed and signed
- 2003: New York State's Clean Indoor Air Act implemented

The collective efforts of ASSIST coalitions and many other state and local organizations eventually resulted in state-level laws reducing the accessibility of tobacco products to youth. In 1997, New York State amended the Public Health Law (Chapter 433 of the Laws of 1997) to establish the Youth Tobacco Prevention and Enforcement Program in the NYSDOH, giving enforcement teeth to the Adolescent Tobacco Use Prevention Act enacted in 1992. The 1997 amendment required tracking of retailer enforcement activities and the publication of an annual report. The law was subsequently strengthened in amendments of 2001–2003, requiring retailers to obtain positive proof of age, limiting the location of vending machines, prohibiting unlawful shipment of tobacco via the Internet and other mail order sales, restricting product placement, increasing fines, and revising the penalty structure.

A second statewide policy front was raising cigarette excise taxes and other tobacco taxes. In 1990, the cigarette excise tax was \$0.39 per pack, but three increases between 1993 and 2002 brought the tax to \$1.50. In 2002, New York City increased the excise tax on cigarettes sold within its borders from \$0.08 to \$1.50 per pack. This tax is imposed on top of the state tax, for a combined excise tax on cigarettes sold in New York City of \$3.00 per pack.

Although some local ASSIST coalitions had independently promoted local cessation services, the state first focused resources on this area in 1999. In October 1999, the New York Medicaid program initiated coverage for prescription cessation medications. In February 2000, coverage was expanded to include over-the-counter medications. In each succeeding year, Medicaid expenditures for cessation medications have increased dramatically.

In 1998, new potential sources of funding catalyzed the development of ambitious plans for a more comprehensive tobacco use prevention program. The Master Settlement Agreement (MSA) was agreed to in 1998, resulting in a first annual payment to the state, in April 2000, of \$274 million (\$140 million directed to the state, \$73 million to New York City, and \$61 million to the remaining counties). In anticipation of funding for tobacco control activities as a result

**§1399-ii. Tobacco use prevention and control program**

1. To improve the health, quality of life, and economic well-being of all New York State citizens, there is hereby established...a comprehensive statewide tobacco use prevention and control program
2. The department shall support tobacco use prevention and control activities including, but not limited to:
  - a. Community programs;
  - b. School-based programs;
  - c. Marketing and advertising;
  - d. Tobacco cessation programs;
  - e. Special projects to reduce the disparities;
  - f. Restriction of youth access to tobacco;
  - g. Surveillance of smoking rates; and
  - h. Any other activities determined by the commissioner to be necessary to implement.

of the MSA, the New York State Commission for a Healthy New York established a Tobacco Settlement Task Force to develop a comprehensive tobacco control plan for New York State. In December 1998, the Task Force released its blueprint for an adequately funded tobacco prevention and control program in New York State.

In 2000, the American Legacy Foundation (Legacy) awarded a 3-year, \$3 million grant to the NYSDOH to establish and support a statewide youth movement against tobacco as a grassroots companion to Legacy's national truth® advertising campaign. Like the CDC funding, the Legacy funds were combined with the HCRA state appropriation to support the state's comprehensive tobacco use prevention and control program.

More recently, a number of laws have been enacted that have changed the tobacco control landscape in New York. On March 1, 2003, in Nassau County and on March 30, 2003, in New York City, ordinances went into effect that prohibited smoking in virtually all enclosed public places. Four months later, effective July 24, 2003, New York State implemented the Clean Indoor Air Act (CIAA) (Public Health Law, Article 13-E), also prohibiting smoking in virtually all workplaces, including restaurants and bars.

Section 1399-ii of the Public Health Law makes it a crime to ship or transport cigarettes sold via mail order, telephone, or the Internet to residents of the state. The law was passed in 2000 and was challenged in court. Those challenges were unsuccessful, and the law went into effect in March 2003.

Finally, New York's Fire-Safe Cigarette Law went into effect on June 28, 2004. The first of its kind in the United States, it requires all cigarettes sold in New York to meet a low ignition propensity standard such that the cigarette is more likely to self-extinguish when not puffed on regularly.

## 3.2 NEW YORK TOBACCO CONTROL PROGRAM

### **NYTCP primary goals:**

1. Eliminate exposure to secondhand smoke.
2. Decrease the social acceptability of tobacco use.
3. Promote cessation from tobacco use.
4. Prevent the initiation of tobacco use among youth and young adults.
5. Build and maintain effective tobacco control infrastructure.
6. Contribute to the science of tobacco control.

The NYTCP is designed to prevent tobacco use initiation, promote cessation, and eliminate exposure to secondhand smoke. To this end, the program has identified six primary goals. There are four programmatic goals, one infrastructure goal, and one evaluation goal:

1. Eliminate exposure to secondhand smoke.
2. Decrease the social acceptability of tobacco use.
3. Promote cessation from tobacco use.
4. Prevent the initiation of tobacco use among youth and young adults.
5. Build and maintain effective tobacco control infrastructure.
6. Contribute to the science of tobacco control.

To achieve the specified goals, the program uses a three-pronged approach to tobacco control, consisting of community mobilization, media and countermarketing, and cessation. The three-pronged approach follows recommendations from NCI (1991), the Commission for a Healthy New York (1998), the CDC (1999), the 2000 Surgeon General's Report on reducing tobacco use (USDHHS, 2000), and the Task Force on Community Preventive Services (2001).

Within each of the four programmatic goals, the program's strategic plan identifies specific objectives that are summarized in **Exhibit 3-1**. In addition, to monitor progress toward these goals and objectives, the program established a series of quantitative indicators. The NYTCP and RTI will use these and other indicators to evaluate progress of the program toward stated goals and objectives. Data on these indicators and other evaluation findings are presented in Chapter 6.

The four programmatic goals will be implemented by following the evidence-based strategies identified by the national Task Force on Community Preventive Services to prevent and reduce tobacco use:

- Smoking bans and restrictions
- Multicomponent mass media campaigns with interventions

### **Exhibit 3-1. Program Goals and Objectives**

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#### **Goal 1: Eliminate exposure to secondhand smoke.**

- Increase public support for New York’s comprehensive clean indoor air law.
- Increase compliance with New York’s comprehensive clean indoor air law.
- Increase the percentage of adults and youth who live in homes where smoking is prohibited.
- Increase the percentage of adults who drive or ride in vehicles where smoking is prohibited.
- Increase the number of educational institutions (elementary, secondary, and post-secondary) that implement effective tobacco-free policies to eliminate tobacco use from all facilities (including dormitories), property, vehicles, and events.

#### **Goal 2: Decrease the social acceptability of tobacco use.**

- Increase antitobacco attitudes among youth and adults.
- Reduce tobacco sponsorship of sporting, cultural, entertainment, art, and other events in the community, region, and state.
- Reduce tobacco promotions occurring in sporting, cultural, entertainment, art, and other events in the community, region, and state.
- Reduce the number of retailers that post point-of-purchase tobacco advertising.

#### **Goal 3: Promote cessation from tobacco use.**

- Increase the number of health care provider organizations that have a system in place to implement the Task Force on Community Preventive Services clinical guidelines for cessation and consistent with the Agency for Healthcare Research and Quality cessation system recommendations.
- Increase the number of Medicaid recipients who access pharmacotherapy for smoking cessation.
- Increase the number of health plans that provide coverage of evidence-based treatment for nicotine dependence.
- Increase the number of non-Medicaid eligible low-income tobacco users who receive free or reduced-priced pharmacotherapy to support a cessation attempt.
- Increase access to cessation counseling and services.

#### **Goal 4: Prevent the initiation of tobacco use among youth and young adults.**

- Increase the unit price of cigarettes sold in New York State.
  - Increase the number of jurisdictions with a 5 percent or less illegal sales to minors rate.
  - Reduce the statewide retailer illegal sales to minors rate to 5 percent or less.
-

- Multicomponent telephone support systems (Quitlines)
- Health care provider reminders alone or with provider education to promote cessation
- Reducing patient costs for treatments
- Increasing the unit price of tobacco products

Finally, a 17-member Advisory Board whose members are appointed by New York's Governor, Senate, and Assembly provide recommendations to the Commissioner of Health on how best to administer and direct the NYTCP.



# 4

## Assessing New York's Tobacco Control Program

In this chapter, we assess the New York Tobacco Control Program (NYTCP), its strategies, and the context within which it operates by examining the evidence base for the strategies used by the program and by reviewing evidence related to the process by which program strategies are (or are not) implemented. To assess the evidence base, we rely on systematic reviews performed by the Task Force on Community Preventive Services and more recently available evidence in the published literature for each of the key strategies used by the program.

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### **4.1 ASSESSING THE EVIDENCE BASE FOR THE PROGRAM'S STRATEGY**

As stated above, the program's strategic plan is built on evidence-based strategies that have been deemed effective by the national Task Force on Community Preventive Services. In this section, we review the Task Force's evidence and more recently available evidence that may or may not support the program's current strategy. The Task Force conducted rigorous systematic reviews of the available evidence for the effectiveness of various tobacco control interventions. The discussion is organized by the six programmatic strategies listed in Section 3.2.

#### **4.1.1 Smoking Bans and Restrictions**

Findings from the Task Force's systematic review indicate that workplace smoking bans lead to a reduction in exposure to

secondhand smoke by 72 percent on average. In addition, complete smoking bans are more effective than partial restrictions. Workplace smoking bans have also been shown to reduce cigarette consumption among smokers. Since the time of the Task Force's review, a systematic review of the effect of smoking bans on smoking behavior was published by Fichtenberg and Glantz (2002). This review finds that among workers, smoke-free workplaces are associated with a 3.8 percentage point reduction in smoking prevalence and a decrease of 3.1 cigarettes smoked per day on average among continuing smokers. The Task Force states that smoking bans have been shown to be effective in a wide variety of public and private workplaces and health care settings, and their effectiveness should extend to other settings.

In addition to the Task Force's endorsement of smoking bans as an effective policy tool, it is important to note that the federal government's *Healthy People 2010* goals include making all schools and workplaces 100 percent smoke-free. They also set goals for reducing the proportion of children with regular exposure to secondhand smoke from 27 percent to 10 percent and nonsmokers' exposure from 65 percent to 45 percent. In light of the evidence and *Healthy People 2010* goals, the program's efforts to eliminate exposure to secondhand smoke (Goal 1 and associated objectives) are well founded.

Based on the Task Force's endorsement of smoking bans and restrictions and in light of the recent comprehensive Clean Indoor Air Act (CIAA) that was implemented on July 24, 2003, that calls for all workplaces to be smoke-free, the program's strategies to increase public support for and compliance with the law are well supported. Programmatic activities to support the objectives within this goal are as follows:

- Community mobilization efforts to educate community members and employers about the health risks of secondhand smoke
- Community mobilization efforts to educate community members and employers about the CIAA that protects workers and the public from exposure to secondhand smoke

- Statewide media campaigns to raise awareness of the dangers of secondhand smoke and increase support for and compliance with the new law
- Efforts to support compliance with the tobacco-free schools law among schools and other educational institutions across the state
- Campaigns to convince community members to make their homes and cars smoke-free

Each of these activities falls under one of the program’s remaining five evidence-based strategies, which we assess in Sections 4.1.2 through 4.1.6.

#### **4.1.2 Multicomponent Mass Media Campaigns with Interventions**

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*Mass media campaigns combined with other interventions led to a decrease in initiation by 8 percentage points, a median decrease in per capita cigarette sales by 15 packs per capita, and a median increase in cessation rates by 2.2 percentage points—a significant increase in light of average annual quit rates of around 3 percent. Overall, the Task Force rated the evidence in support of media campaigns with interventions as strong.*

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The Task Force’s systematic review concluded that mass media campaigns combined with other interventions led to a decrease in initiation by 8 percentage points, a median decrease in per capita cigarette sales by 15 packs per capita, and a median increase in cessation rates by 2.2 percentage points—a significant increase in light of average annual quit rates of around 3 percent. Overall, they rated the evidence in support of media campaigns with interventions as strong.

##### **Tobacco Control Program Mass Media Plans**

Mass media campaigns are a central component in CDC’s Best Practices guidelines, constituting roughly 20 percent of the recommended programmatic expenditures for a comprehensive tobacco control program. The importance of mass media campaigns is also reflected in the program’s strategic plan, where mass media campaigns are relevant to all four programmatic goals. In light of the available evidence, mass media campaigns combined with other interventions (e.g., community-based interventions) should play a critical role in the program’s efforts to curb the health and economic burden of tobacco in New York.

A more challenging question for mass media campaigns is deciding which types of messages are most salient to the target audiences. The available evidence suggests that emotional portrayals of the health effects of smoking through the use of personal testimonials are one of the strongest approaches to take. We will address this issue and related challenges in

Section 4.4, when we assess how well the program has implemented strategies consistent with its strategic plan.

#### **4.1.3 Multicomponent Telephone Support Systems (Quitlines)**

According to the Task Force, multicomponent telephone support systems are defined as organized efforts to help tobacco users quit and not start using tobacco again. They provide one or more sessions of counseling or assistance. The telephone sessions are often complemented by the distribution of materials about quitting, counseling, and nicotine replacement therapies (NRTs).

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*The Task Force rated the evidence for the effectiveness of Quitlines as strong.*

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The literature summarized by the Task Force found small but consistent increases in the number of tobacco users who quit following the use of a Quitline. They rated the evidence for the effectiveness of Quitlines as strong. The median increase in quit rates was 2.6 percentage points or a 41 percent increase compared to those who did not receive telephone counseling. The Task Force also notes that telephone support is most effective when combined with other efforts, such as other educational approaches or medical therapies.

Zhu et al. (2002) note, however, that much of the evidence base comes from clinical trials, and it is important to understand how Quitlines operate in real-world settings. To that end, they embedded a randomized experiment into the California Quitline. Callers were assigned to either a treatment group that received up to seven counseling sessions and self-help materials or a control group that received self-help materials. The control group could also receive counseling if they called back for it. Counseling was provided to 72 percent of those in the treatment group and 32 percent of those in the control group. Rates of abstinence were higher in the treatment group at 1, 3, 6, and 12 months, confirming the Task Force recommendation.

One important finding from the literature is that many of the studies that have found Quitlines to be effective and efficacious have used proactive, rather than reactive, counseling. A practical consideration for statewide Quitlines is the trade-off between the reach of the service and the effort expended per caller. Reactive counseling has the potential to reach a larger

population than proactive counseling given limited resources. The New York Quitline has relied exclusively on reactive counseling to date; however, beginning on October 1, 2004, the Quitline will offer NRT starter kits and provide one scheduled counseling call to eligible smokers ready to quit. The Quitline anticipates providing these services to 40,000 smokers over the next 12 months.

New York's Quitline has been in operation since January 2000 and now provides a wide range of services, including

- individualized telephone counseling;
- prerecorded messages on quitting, NRT, tips for weight control, dealing with withdrawal symptoms, staying quit, coping with stress, and the truth about light and ultra-light cigarettes;
- a Web site with fact sheets on the health effects of smoking;
- printed self-help materials for quitting and preventing relapse available through the Web site or phone; and
- links to local cessation programs.

In light of all of the services available through the Quitline, the program's funded activities are squarely in line with the Task Force's recommendations.

#### **4.1.4 Health Care Provider Reminders Alone or With Provider Education to Promote Cessation**

Both the Agency for Healthcare Research and Quality (AHRQ) and the Task Force on Community Preventive Services recommend that providers identify and discuss the importance of smoking cessation with current smokers. Specifically, some of AHRQ's clinical practice guideline recommendations that are relevant to the role of providers include the following (USDHHS, 2000):

- It is essential that clinicians and health care delivery systems (including administrators, insurers, and purchasers) institutionalize the consistent identification, documentation, and treatment of every tobacco user seen in a health care setting.
- Brief tobacco dependence treatment is effective, and every patient who uses tobacco should be offered at least brief treatment.

- There is a strong dose-response relation between the intensity of tobacco dependence counseling and its effectiveness. Treatments involving person-to-person contact (via individual, group, or proactive telephone counseling) are consistently effective, and their effectiveness increases with treatment intensity (e.g., minutes of contact).
- Because effective tobacco dependence treatments are available, every patient who uses tobacco should be offered at least one of these treatments:
  - Patients *willing* to try to quit tobacco use should be provided treatments identified as effective in this guideline.
  - Patients *unwilling* to try to quit tobacco use should be provided a brief intervention designed to increase their motivation to quit.

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*The Task Force's review finds that interventions that include a provider reminder system and provider education program lead to a median increase in the percentage of patients who receive advice by 20 percentage points. Furthermore, there is an associated increase in patient quit rates by 4.7 percentage points.*

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The clinical practice guidelines also state that there is evidence that consistent and effective delivery of tobacco interventions requires coordinated interventions within health care settings. In addition to interventions from the health care provider, health care administrators, insurers, and purchasers should encourage and support tobacco dependence treatment. Health care administrators and insurers should ensure that providers have the training and support to provide effective interventions.

In addition to these guidelines, the Task Force finds strong evidence to support the recommendation that health care systems should institute provider reminder systems to identify tobacco users and prompt providers to discuss and advise patients about cessation. The Task Force's review finds that interventions that include a provider reminder system and provider education program lead to a median increase in the percentage of patients who receive advice by 20 percentage points. Furthermore, there is an associated increase in patient quit rates by 4.7 percentage points.

Recently, the NYTCP awarded grants to 19 regional Cessation Centers to serve the entire state to help promote provider advice to smokers. The primary task for the Centers is to provide training and technical assistance to health care provider organizations and providers regarding the design and implementation of systems to identify tobacco users at every patient encounter and provide counseling to tobacco users.

The Centers will also identify and promote cessation services in their respective catchment areas. In light of the new Cessation Center activities, the program's efforts are in line with recommended practices for promoting cessation in health care settings.

#### **4.1.5 Reducing Patient Costs for Treatments**

The Task Force's review of reducing out-of-pocket costs for cessation attempts indicated that there is sufficient evidence of effectiveness to recommend this strategy as a way to increase utilization of cessation therapies and promote cessation. Since the time of the Task Force's review, additional evidence has been found to support reducing out-of-pocket costs for cessation treatment. For example, Schauffler et al. (2001) conducted a randomized experiment with more than 1,200 smokers with employer-sponsored coverage in two large health maintenance organizations. The control group received a self-help kit that consisted of a video and pamphlet and the treatment group also received the self-help kit, fully covered benefits for over-the-counter NRT, and participation in a group behavioral cessation program with no cost sharing. The 1-year follow-up quit rates were 18 percent for the treatment group and 13 percent for the control group.

In light of the Task Force's recommendation and more recently available evidence, it is reasonable for the program to subsidize pharmacotherapy for tobacco users. What will be important to assess for the evaluation is the extent to which those who are eligible for the benefit are aware of it, make use of it, and quit successfully as a result.

#### **4.1.6 Increasing the Unit Price of Tobacco Products**

The final strategy called for in NYTCP's strategic plan is to increase the unit price of tobacco products. An extensive set of literature demonstrates the effectiveness of increasing the price of tobacco products on the prevalence and intensity of tobacco use. The Task Force states that increases in price prevent youth smoking, reduce consumption among smokers, and reduce the prevalence of smoking.

Numerous studies of the impact of tobacco prices and/or excise taxes on consumption have been conducted. Most of these

studies focus on smoking. Several points of consensus have evolved from this body of work:

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*A 10 percent increase in price will reduce overall cigarette consumption by 4 percent.*

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- There is a significant negative relationship between tobacco prices and the demand for tobacco products.
- In adult samples, a consensus estimate indicates that a 10 percent increase in price will reduce overall cigarette consumption by 4 percent.
- In youth samples, a consensus estimate of the price effect indicates that a 10 percent increase in price will reduce consumption by 6 percent.
- Estimated price elasticity varies significantly by socioeconomic status (SES), gender, age, and race/ethnicity. Lower SES groups are more price responsive than higher SES groups. Males are more price responsive than females. Younger smokers are more price responsive than adult smokers. Minority smokers, in particular Blacks and Hispanics, are more price responsive than Whites.

In adults, most of the impact of a price/tax increase is assumed to be in promoting cessation (and reducing the number of cigarettes smoked). In youth, it had been thought that most of the impact of a price/tax increase would be to prevent smoking initiation (Chaloupka, Tauras, and Grossman, 2000). However, recent evidence has called this assumption into question (e.g., DeCicca, Kenkel, and Mathios, 2002). It now appears that higher prices/taxes act to prevent escalation to regular smoking among youth and might also significantly promote cessation (e.g., Emery, White, and Pierce, 2001; Nonnemaker, 2002). A few recent studies have examined this issue and found that price and/or excise taxes significantly promote smoking cessation in adolescents (Nonnemaker, 2002), young adults (Tauras, 2004), and adults (Farrelly and Thomas, 2002), although the magnitude of the effects is modest.

Responsiveness to price/tax changes also differs significantly by race/ethnicity, SES, and gender (Chaloupka and Pacula, 1999; Farrelly et al., 2001). Blacks and Hispanics are more price responsive than Whites. This appears to be true for both youth and adults. These differences remain after controlling for income (Farrelly et al., 2001). Lower SES individuals appear to be more price responsive than high SES individuals (Farrelly et al., 2001). These results have important implications for links



between smoking and poverty, the issue of the regressive nature of tobacco taxes, and the equity of tobacco control policies. Although smoking rates are higher in lower SES groups, which implies that more of the burden of a tax increase would fall on this group, lower SES individuals are also more responsive to price increases and thus would be more likely to quit or reduce consumption. This implies that the benefits of a tax increase would also be greater for lower SES groups (Townsend, 1987).

Several recent economic studies have examined the impact of cigarette excise taxes on pregnancy outcomes. These studies have concluded that an increase in cigarette taxes can improve birth outcomes as measured by low birth weight by reducing consumption or promoting quitting among pregnant women (Ringel and Evans, 2001).

#### **4.1.7 Youth Access Law Enforcement**

Significant state resources are devoted to the enforcement of the Adolescent Tobacco Use Prevention Act (ATUPA), as required by law and in order to support comprehensive enforcement efforts. Although not an evidence-based intervention, enforcement of both sales to minors restrictions and clean indoor air laws is a component of the CDC's *Best Practices for Tobacco Control*. CDC recommends that New York fund this program component at a minimum of \$7.96 million per year. The goal of the program is to lower the prevalence of tobacco use among youth by reducing tobacco product sales and preventing the onset of tobacco use. Specifically, the program seeks to improve compliance by tobacco retailers with the ATUPA. One of the functions of state and local sanitarians is to conduct compliance inspections with the assistance of underage youth who attempt to purchase tobacco products. Additional visits are also made to determine compliance with Department of Taxation and Finance registration and Department of Health signage requirements, to educate retail store operators of the Public Health Law requirements, to verify vending machine supervision and location compliance, and to investigate complaints.

Fines from \$300 to \$1,000 are levied for the first violation. Subsequent violations incur fines between \$500 and \$1,500. For all violations, a \$50 surcharge is also assessed. For sales to a minor, two points are assigned. This is reduced to one point if it can be shown that at the time of the sale the seller had completed a state-certified tobacco sales training program. If three or more points are accrued within a 36-month period, then the registration to sell tobacco and lottery licenses are suspended for 6 months. When the suspension ends, three points are removed from the retailer's record. Whenever any points are assigned to a tobacco retailer, at least two reinspections per year will be conducted until the points are removed. Four violations of any kind within a 3-year period will result in revocation of the tobacco registration and lottery license for 1 year.

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*In total, the evidence suggests that current efforts to enforce youth access laws may not be sufficient to curb youth access to cigarettes or to reduce youth tobacco use.*

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There is considerable controversy among tobacco control researchers about the effectiveness of efforts to curb youth access to cigarettes and therefore reduce youth smoking. The Task Force found sufficient evidence to conclude that community mobilization when combined with additional interventions, such as active enforcement of illegal sales to minors and community-directed education of tobacco retailers, is effective at reducing youth's access to tobacco. This does not address whether reduced access has a meaningful impact on youth smoking. The Task Force also notes that there is no evidence that single interventions (sales laws directed at retailers; purchase, possession, and use laws directed at youth; active enforcement of sales laws; retailer education; community education) are effective in reducing access to tobacco.

In addition, a systematic review of the literature by Stead and Lancaster (2000) concluded the following:

- Giving information alone to retailers about the law is not effective.
  - There is evidence that interventions to educate retailers can improve compliance, but the successful interventions used a variety of strategies, including personal visits and mobilizing community support.

- Enforcement, or warnings of it, generally had an effect on retailer behavior.
  - Sustaining compliance requires regular enforcement, and the existing evidence suggests reduced effectiveness if checking occurs much less than four to six times a year.
- The penalty for infringement may also be important, although there is little direct evidence of the relative deterrent effect of different penalties.
- Removal of a license to sell tobacco could be more effective, if the licensing itself is strictly monitored.

In total, the evidence suggests that current efforts to enforce youth access laws have increased retailer compliance but may not be sufficient to curb youth access to cigarettes or to reduce youth tobacco use. Access may diminish if four to six compliance checks per year are conducted. However, this level of enforcement effort has not been shown to impact youth smoking prevalence.

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## **4.2 ASSESSING THE IMPLEMENTATION OF THE PROGRAM'S STRATEGIES**

In this section, we assess the extent to which the program has been able to implement activities consistent with its strategic plan and how well activities have been implemented. We assess program implementation in three ways. First, we summarize documents from the state that are germane to program implementation (e.g., state audit of the program). Second, we describe the program's approach for each major program component and, where possible, we comment on the quality of program implementation. Finally, we summarize stakeholder feedback on barriers to the program's progress and comments on the program's overall strategy and strengths and weaknesses. These opinions, insights, and perceptions are included in the various programmatic discussions to provide context and perspective. Below, we describe the purpose and methods of the stakeholder component of this evaluation.

The CDC Framework for Program Evaluation (CDC, 1999) calls for engaging stakeholders as a key step in a comprehensive program evaluation. We conducted stakeholder interviews to elicit their opinions about the program's strengths and

weaknesses and current set of programmatic priorities and available funding.

To obtain input from "stakeholders," RTI conducted 14 semistructured telephone interviews that lasted 30 to 40 minutes in July 2004. NYTCP stakeholders were defined as individuals who had some familiarity with the NYTCP and were actively involved in tobacco control in some manner.

Stakeholders included members of the Tobacco Advisory Board (N = 5), staff from voluntary agencies that address tobacco control (e.g., American Cancer Society, American Lung Association) (N = 5), tobacco control researchers in New York (N = 1), and directors of local health departments (N = 3).

Stakeholder interviews addressed the following topics:

- The program's current priorities for tobacco control
- Strengths and weaknesses of the program
- Barriers to implementing tobacco control
- The state's political and financial climate for tobacco control
- Dissemination and use of evaluation information

#### **4.2.1 State Documents on Program Implementation**

For a perspective on the program's implementation, we first summarize NYTCP program expenditures from 2003 and the targeted level of expenditures by CDC's eight best practice funding categories. In 2003, New York allocated \$50.79 million in funding for tobacco control from HCRA (including unspent funding from previous years). The 2003 funding level represents 52 percent of what CDC recommends as the minimum funding level for New York State. However, the program only spent 62 percent (\$31.2 million) of the available funding. **Exhibit 4-1** details how 2003 funds were expended. The most significant difference between actual and targeted expenditure levels is for media, where roughly one-third of the available funds were expended. Since the beginning of the comprehensive NYTCP in 2000, the program has spent a little more than half of the available funds on average (**Exhibit 4-2**).

**Exhibit 4-1. Program Expenditures by Activity Type, 2003**

Program Component	Expenditure Level	Percent of CDC Recommended Minimum	Targeted Expenditure Levels	Percent of CDC Recommended Minimum
Community Programs	\$12,502,445	92.3%	\$14,750,000	109.0%
Statewide Programs	\$32,000	0.44%	\$850,000	11.7%
Countermarketing	\$3,546,053	19.6%	\$10,000,000	55.1%
School Programs	\$2,927,410	21.7%	\$4,857,900	36.0%
Cessation Programs	\$4,527,818	22.8%	\$10,320,000	52.0%
Chronic Disease Programs	Not Funded	0.0%	Not Funded	0.0%
Enforcement	\$4,581,803	57.6%	\$4,600,000	57.8%
Surveillance and Evaluation	\$1,103,299	13.2%	\$2,500,000	30.0%
Administration and Management	\$2,000,000	48.0%	\$2,000,000	48.0%
Total	\$31,220,828 <sup>a</sup>	32.6%	\$49,877,900	52.0%

<sup>a</sup>Not all available funds were expended during 2003.

**Exhibit 4-2. Funding Allocation Versus Expenditures, 2000–2003**

	2000	2001	2002	2003 <sup>a</sup>
Expenditures	\$11,147,742	\$31,782,193	\$39,460,443	\$31,252,828
Allocation	\$39,938,999	\$52,129,999	\$52,749,999	\$50,789,999
Program Funding Level	\$42,500,000	\$42,500,000	\$42,500,000	\$36,950,000
Percent of Allocated Funds Expended	28%	61%	75%	62%

<sup>a</sup>Estimated.

One possible explanation for the difference between program funding and expenditures appears in the 2001 audit by the Office of the State Comptroller (2001-S-19). This audit set out to address the following questions:

- Does the Department have a performance measurement system in place to effectively monitor the results of the NYTCP?
- Are NYTCP contracts executed in a timely fashion?
- Does the Department adequately monitor coalition expenses and the administration of the Tobacco Pool?

In addressing the second question, the audit found that there were delays in the contracting process with coalitions and with Excellus, the organization charged with dispensing funds for the Tobacco Pool—the fund that holds the Master Settlement Agreement (MSA) funds and some excise tax funds. The audit raised concerns about the performance of the coalitions that were working without fully executed contracts. Delays in the contracting process may explain some of the failure to expend all of the funds that are allotted to the program. A follow-up audit in October 2003 indicated that some progress had been made in ensuring timely contract renewals in the 2003–2004 fiscal year.

For new contract procurements, the process is still rather lengthy. For example, the recent Cessation Center request for applications was under development by the program as early as April 2003 (as reported to the Advisory Board on April 15, 2003) and was released on November 3, 2003. Notification of awards occurred on July 22, 2004. The initial application due date was January 14, 2004, but because approval of responses to submitted questions was delayed, the final due date was February 12, 2004. The program reviewed, scored, and made funding recommendations on the received applications by April 2, 2004. Approval of these recommendations and approval of notification of bidders occurred on July 22, 2004. Thus, the procurement process took well over 1 year, not including the execution of contracts, which is anticipated to take an additional 3 to 6 months. With a minimum of 18 months required to implement the contracts necessary to spend program funds, the program must plan very far in advance in order to meet spending targets.

Stakeholders' feedback on barriers to program implementation provides some insight into the expenditure shortfalls. Two commonly cited barriers to program implementation are "bureaucratic red tape" and "lack of political support" for the program. One stakeholder summarized the bureaucratic environment as follows:

*"The state's procurement process bureaucracy is cumbersome. It takes too long to prepare a request for proposal, too long to review, too long*

*to get back to groups about it. The process is bogged down in bureaucracy. I don’t think this program is singled out, it’s just endemic that they move at a snail’s pace.”*

According to the stakeholders, one of the biggest barriers to effective program implementation is the lack of commitment by NYSDOH to implement evidence-based media campaigns.

#### **4.2.2 Program Component Implementation and Quality**

To better understand the history of program implementation and potential barriers to implementation, we summarize relevant and available information for the following major program initiatives:

- Quitline
- Community programs
- Countermarketing
- Enforcement

At this stage of the evaluation, many of the efforts have been focused on enhancing the available outcome data for the program through the development of the Adult Tobacco Survey (ATS), a longitudinal youth survey, surveys of health care providers and provider organizations, surveillance of retail advertising, and measures of compliance with and impact of the new CIAA. In terms of process evaluation data (which speaks to program implementation), we are developing a Web-based community activity tracking system. Since many of these systems are not yet implemented or only recently implemented, our ability to comment on the quality of program implementation is limited. Future efforts will need to include more extensive process evaluation to understand the quality of the program’s outputs across all of the major components of the program (e.g., Community Partnerships, Cessation Centers).

##### **Quitline**

**Overview.** In 1999, the NYSDOH included a statewide Quitline in the State’s Comprehensive Tobacco Control Plan and awarded Roswell Park Cancer Institute \$90,000 for an 8-month contract to build the infrastructure to establish a Smokers’ Quitline located at Roswell Park. Grant funds were used to

establish a call center infrastructure, set up workstations and equipment, develop and print materials, and hire and train counseling staff. The original concept for the Quitline was to serve as a clearinghouse for information and referrals to local cessation services, thereby supporting planned statewide and regional mass media campaigns. A dedicated toll-free number was established, a directory of local cessation services was compiled, a product line of "branded" Quitline educational materials was created, bilingual telephone counselors were hired and trained, prerecorded taped information messages were created, and a computerized management information system (MIS) was implemented to assist counselors in handling calls and tracking mailings. The Quitline was officially launched in January 2000, when Governor Pataki issued a press release announcing the service. Over time, call volume to the Quitline increased in response to state and local initiatives to promote the service, and NYSDOH adjusted the budget for the service accordingly (see **Exhibit 4-3**).

In 2003, the Quitline provided telephone assistance to more than 70,000 callers. In addition, the Quitline partnered with the City of New York Department of Health and Mental Hygiene and distributed 35,000 units of NRT to as many callers. With program statewide media back on the air only for the last 5 months of the 2003/2004 (Quitline) fiscal year, compared to 10 months of the 2002/2003 fiscal year, and with no large-scale NRT giveaway similar to the New York City program, call volume was lower in 2003/2004 than in 2002/2003.

**Outcome Evaluation and Quality Assurance.** To monitor Quitline performance, Roswell Park regularly monitors performance indicators and conducts monthly customer satisfaction surveys and annual follow-up surveys of tobacco users to assess their quit status. The most recent evaluation data collected on a random sample of 561 tobacco users who called the Quitline found that 20 percent were not smoking 12 months after receiving counseling (based on 7-day nonsmoker prevalence). This quit rate compares favorably with other reactive Quitline services but clearly can be improved upon with



**Exhibit 4-3. New York State Smokers' Quitline History**

<b>Fiscal Year</b>	<b>Promotion</b>	<b>Call Volume<sup>a</sup></b>	<b>Cumulative Call Volume</b>	<b>Annual Budget</b>
September 1999–May 2000	<ul style="list-style-type: none"> <li>Start-up funds to establish Quitline infrastructure</li> <li>Governor's announcement (1/00)</li> <li>Local mass media campaigns (e.g., Quit Now 6/00)</li> </ul>	4,553	4,553	\$90,000
June 2000–May 2001	<ul style="list-style-type: none"> <li>NYSDOH launches multimillion dollar TV campaign (11/02)</li> <li>Local mass media campaigns (e.g., Smoke-Free Families)</li> </ul>	37,236	41,789	\$250,000
June 2001–May 2002	<ul style="list-style-type: none"> <li>New York City launches \$6M "Quit Yet?" campaign (2/01)</li> <li>Web site service added to Quitline</li> <li>NYSDOH advertising campaign expanded to include radio and billboard advertising</li> <li>Local initiatives (Quit &amp; Win contests, 11/01–2/03)</li> </ul>	51,934	93,723	\$500,000
June 2002–May 2003	<ul style="list-style-type: none"> <li>Local initiatives (NRT vouchers/Quit &amp; Win contests, 11/02–2/03)</li> <li>Fax referral program ("Fax to Quit") (7/02)</li> <li>Quitline number changed to 1-866-NY QUITTS (3/03)</li> <li>NYSDOH TV campaign suspended (4/03)</li> <li>New York City nicotine patch program (4/03–5/03)</li> </ul>	105,250 <sup>a</sup>	198,973	\$500,000
June 2003–May 2004 <sup>a</sup>	<ul style="list-style-type: none"> <li>Local initiatives (NY Smoke-Free campaign, 6/03–8/03; NRT promotions/Quit &amp; Win contests, 1/04–3/04)</li> <li>NYSDOH advertising campaign reinstated to promote the Quitline (1/04)</li> </ul>	44,838	243,811	\$500,000

<sup>a</sup>Includes 35,000 callers who registered for the New York City Department of Health and Mental Hygiene nicotine patch giveaway.

the addition of proactive counseling and pharmacotherapy. In addition, 90 percent of respondents have tried to stop smoking since they called the Quitline.

Quality assurance reports generated by Roswell Park provide information on call volume, agent performance, daily numbers with breakouts of abandonment rates, short calls, average length of call, taped messages, voice mails, and other relevant information. The most recent quality assurance data indicate that the average wait time for counselor-assisted calls was 40 seconds and that less than 4 percent of callers hung up before being assisted. Finally, 51 percent of all calls were handled by a counselor, and the average length of these calls was 6.5 minutes.

Before August 2003, Roswell Park incorporated questions about receipt and satisfaction with program services (e.g., use and rating of Quitline materials, courtesy and satisfaction with the telephone counseling services) in annual follow-up surveys. These surveys found that 70 percent to 80 percent of tobacco users rated the service as helpful to their efforts to stop smoking and rated the materials sent to them as helpful and accurate (**Exhibit 4-4**).

**Exhibit 4-4. Tobacco User Satisfaction as Measured in Annual Follow-up Surveys**

<b>Survey Results</b>	<b>Survey #1 July 2001</b>	<b>Survey #2 July 2002</b>
Found the intervention specialist to be courteous	99%	92%
Found the intervention specialist to be knowledgeable	84%	92%
Believed the intervention specialist was a helpful resource	69%	73%
Found the <i>Break Loose Guide</i> helpful	70%	83%

Starting in August 2003, Rowell Park hired a survey contractor to conduct a continuous, rolling satisfaction survey of callers each week. Each week, they randomly select 15 callers to interview within 10 days to assess their satisfaction with the service provided. Callers are asked if they had received the information and materials requested when they called the Quitline, their assessment of the knowledge and courtesy of the information specialist they had spoken to when they called, and the length of time it had taken to get through to the Quitline and receive the materials sent to them in the mail. The

Quitline receives weekly updates on caller satisfaction, and monthly summaries are prepared for review by the Quitline Coordinator and Principal Investigator. **Exhibit 4-5** provides a summary of the satisfaction indicators from this survey between August and October 2003. The response rate for this survey is over 80 percent.

**Exhibit 4-5. Indicators of Caller Satisfaction with Quitline Services**

Satisfaction Measure	Aug. 2003 (n = 34)	Sept. 2003 (n = 45)	Oct. 2003 (n = 36)	Cumulative (n = 131)
Self-reported wait times				
Less than 1 minute	59.0%	58.7%	52.8%	55.0%
1 to 3 minutes	23.1%	37.0%	33.3%	31.3%
More than 3 minutes	12.8%	2.2%	13.9%	10.7%
Was the counselor courteous?	Yes (87.2%)	Yes (97.8%)	Yes (100%)	Yes (94.7%)
Was the counselor helpful in answering your question?	Yes (87.2%)	Yes (97.8%)	Yes (100%)	Yes (94.7%)
Did you get the material you had requested?	Yes (94.9%)	Yes (95.7%)	Yes (88.9%)	Yes (92.4%)
How many days after calling did you get the material you requested?				
Within 3 days	21.1%	50.0%	50.0%	40.2%
4 to 7 days	65.8%	45.5%	46.9%	52.5%
8 to 14 days	10.5%	2.3%	3.1%	5.7%
Did you find the <i>Break Loose Guide</i> helpful?	(n = 27) Yes (84.4%)	(n = 33) Yes (91.7%)	(n = 21) Yes (100%)	(n = 97) Yes (90.7%)
(current tobacco users only)				
Did you find the information in the <i>Staying Smoke Free Guide</i> helpful?	(n = 2) Yes (100%)	(n = 4) Yes (100%)	(n = 5) Yes (100%)	(n = 11) Yes (100%)
(former tobacco users)				
Overall, how satisfied were you with the Quitline?				
Very satisfied	89.7%	89.1%	72.2%	84.0%
Somewhat satisfied	7.7%	10.9%	25.0%	14.5%
Somewhat dissatisfied	2.6%	0%	0%	0.8%
Very dissatisfied	0%	0%	2.8%	0.8%

**Summary.** From many perspectives, Quitline implementation has appeared to go well. The Quitline was implemented soon after the program began in January 2000, and call volume has steadily increased since then. Quitline services have also been enhanced over time to include a fax referral program ("Fax to Quit") for health care providers and a Web site service. The Web site permits materials to be ordered online and tobacco users to easily link to other Web-based resources to help them stop smoking.

In Section 6.5 of this report, we assess the extent to which smokers are aware of the Quitline. From these data, we can determine whether the Quitline is reaching the full population of smokers interested in quitting.

### ***Community Programs***

In terms of monitoring program implementation, RTI has been working with the NYTCP to develop a Web-based community activity tracking system to monitor the community partners' (i.e., Community Partnerships, Youth Partners, Cessation Centers) activities more closely. Historically, the NYTCP has received written monthly or quarterly progress reports from funded programs and for one year had a "local program monitoring system (LPMS)" to gather data electronically. In addition, RTI has been developing a "sentinel site" study to better understand how tobacco control functions at the local level. Both of these studies will provide us with more insights into funded activities at the local level. These two evaluation efforts are described in greater detail in Chapter 5. However, because these studies are not yet complete, our ability to speak to program implementation and barriers at the local level is limited at this time. We note that 92 percent of funds allocated to community programs (see Exhibit 4-1) were expended in 2003, constituting 100 percent of the CDC recommended minimum funding level for this program component.

### ***Countermarketing***

**Overview.** As noted above, stakeholders have raised concerns about how the NYTCP's countermarketing efforts have been implemented. In this section, we review the history of countermarketing efforts with respect to the intensity of media

delivery and selection of ads. To provide some context, we first review the literature that addresses what types of media messages are most effective.

**The Effectiveness of Antismoking Media Messages among**

**Adults.** As previously noted, the Task Force strongly recommends mass media combined with other interventions as an effective strategy to reduce tobacco use. The Task Force does not, however, provide guidance on the types of messages that are most effective. Research on the effectiveness of antismoking media messages among adult populations is relatively sparse compared to the literature devoted to youth populations. However, a growing body of work suggests that the most effective antismoking media messages for adults are ones that arouse strong emotional responses. In particular, ads that use stark testimonials to depict the long-term consequences of smoking and reasons for quitting smoking (e.g., dying prematurely due to tobacco and leaving family members behind) have been shown to provoke strong reactions from adult populations of smokers and nonsmokers.

Goldman and Glantz (1998) examined the effects of various message strategies in a review of more than 100 tobacco countermarketing ads used in the California and Massachusetts campaigns, among 186 focus group transcripts with more than 1,500 children and adults. They categorized the message strategies into eight categories: (1) industry manipulation, (2) secondhand smoke, (3) addiction, (4) cessation, (5) youth access, (6) short-term cosmetic effects, (7) long-term health effects, or (8) romantic rejection. Their study found that industry manipulation and secondhand smoke messages received the most positive support from the focus group participants and were the most effective strategies for both adult and youth audiences.

Other studies have used forced exposure designs to examine the impact of emotional message strategies among adults (Montazeri and McEwen, 1997). In forced exposure studies, subjects view various classes of content in a laboratory setting and fill out closed-ended surveys that assess their evaluations of each ad. Montazeri and McEwen (1997) used this design to compare the effects of two emotional message strategies

among a sample of high school students, college students, and adult laborers. Study participants were shown one ad with a “fear-inducing” message and another with a “positive” message. Their results suggested that emotionally-laden advertisements may be effective in making adults think about quitting smoking. Nearly 80 percent of all respondents in their study indicated that the fear-inducing advertisement was more likely to influence them to stop smoking, and the vast majority rated this ad as their favorite.

A few researchers have examined the effectiveness of tobacco countermarketing ads using cross-sectional and longitudinal surveys of adults. These studies offer a higher level of external validity than those using focus group and forced exposure methodology, but they are limited in that they rely on self-reported measures of exposure.

In a longitudinal study of Massachusetts adults, Biener, McCallum-Keeler, and Nyman (2000) assessed receptivity to the Massachusetts television antismoking campaign. Adult responses to the campaign were examined in terms of self-reported exposure and perceived effectiveness of the advertisements. This study found that 56 percent of Massachusetts adults reported seeing antismoking advertisements at least once a week during the preceding 3 years. The average effectiveness rating for all advertisements recalled was 7.29 on a 0 to 10 scale and did not differ significantly by smoking status. Ads that elicited strong negative emotions (sadness and fear) were rated most effective by quitters, nonsmokers, and by smokers who at baseline were planning to quit soon. Humorous and entertaining ads were seen as ineffective by all groups.

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*Other research by Biener and colleagues shows ads with strong emotional content to be effective in promoting adult cessation.*

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Other research by Biener and colleagues shows ads with strong emotional content to be effective in promoting adult cessation. In an unpublished, ongoing study, Biener and colleagues collected a representative sample of Massachusetts adults with oversampling of individuals who reported quitting smoking in the past 2 years (Biener and Taylor, 2002). Recent quitters were asked whether they used various forms of help in order to quit, such as NRTs, self-help brochures, and other methods. Adults were also asked whether any television commercials

about tobacco contributed to their quitting and, if so, to describe the ad or ads they had seen. Among the quitters in their sample, more reported the helpful influence of a television commercial (29 percent) than either NRT (18 percent), professional consultation (13 percent), or self-help materials. The majority of the ads described by these recent quitters were ads featuring Pam Laffin (a young woman who developed emphysema early in life from smoking); those featuring Rick Stoddard (a man whose wife died from lung cancer at age 46); and "Cigarette Pack," which shows a man placing a photograph of his daughter on his pack of cigarettes as a reminder of why he should quit. All three of these ads were rated by independent coders as being emotionally moving.

Although research on the effectiveness of antismoking media messages among adults is limited, there is evidence from multiple studies, using different methodologies, that messages emphasizing long-term health effects and other messages that evoke strong emotional reaction are effective among adult populations. It has been argued that unlike youth audiences, these types of messages are more salient for adult audiences and are integral to persuasive health messages for adults (Hale and Dillard, 1995; Mongeau, 1998).

#### **A Review of Statewide Antismoking Media in New York.**

In **Exhibit 4-6**, we summarize all antitobacco advertisements that have aired statewide in New York between the third quarters of 2003 and 2004. In our review, we also made note of an 8-month gap in television advertisements from March to November 2003—a period when New York City and then New York State implemented the comprehensive bans on smoking in the workplace.

Overall, statewide advertising has focused primarily on the issue of secondhand smoke in terms of both its negative health effects and adults' support for the recently-enacted CIAA in New York. A smaller proportion of statewide media has addressed smoking cessation with messages that highlight the long-term effects of smoking and family concerns as reasons

**Exhibit 4-6. Statewide Antitobacco Advertising in New York, Q3 2003–Q3 2004**

<b>Title</b>	<b>Time</b>	<b>Issue</b>	<b>Message Strategies</b>	<b>Emotion/ Impact</b>
Bartender	Q3 2004	SHS	Personal testimony, long-term effects (heart attacks)	Low
Baby Seat	Q2 2004	SHS	Family endangerment, industry quote, health effects to infants	High
Quitting Takes Practice	Q2 2004	Cessation	Humor, cartoon	Low
Sign of the Times	Q2 2004	SHS	Changing social norms	Low
Cigarette Pack	Q2 2004	Cessation	Long-term effects as reasons for quitting, concern for family	High
Little Girl	Q2 2004	SHS	Personal testimony, short-term effects of SHS	Low
Front Porch	Q2 2004	SHS	Personal testimony, family endangerment	Low
Never Smoke	Q2 2004	SHS	Personal testimony, short-term effects of SHS	Low
Quit Yet	Q2 2004	Cessation	Humor, entertainment	Low

Note: SHS = secondhand smoke.

for quitting, in addition to more lighthearted messages that promote the New York State Quitline and emphasize that quitting smoking takes practice.

Although several advertisements have used long-term health effect messages, relatively little of New York's antismoking media has utilized message strategies that existing research has found to be effective among adults. In particular, most advertisements are low in emotional arousal, compared with ads used by previous campaigns such as the Pam Laffin series in Massachusetts. Two of the statewide advertisements used in this time period employ message strategies that have been shown to be ineffective, specifically humor (Goldman and Glantz, 1998; Biener, Harris, and Hamilton, 2000).

Although much of the current statewide media use message strategies that have been deemed ineffective by previous research, there are at least two New York advertisements that use strategies that have been shown to be effective in prior studies. The ads "Baby Seat" and "Cigarette Pack" are considerably higher in emotional content as they employ



stronger messages about family concerns with smoking. In addition, the "Cigarette Pack" ad has been evaluated as being emotionally moving and effective in provoking adult smokers to think about quitting smoking (Biener and Taylor, 2002).

Many stakeholders have indicated that the media campaign should be coordinated with other aspects of the program and that the messages should evoke stronger emotional responses to be effective. They indicate that the program does not have sufficient control over the media campaign to select advertisements and coordinate them with the Quitline and community-based efforts.

Our assessment of the program's choice of media messages is consistent with stakeholder concerns (detailed in Section 4.2.3)—that they do not consistently make use of messages that evoke strong emotional responses. In addition, the program missed an historic opportunity to air secondhand smoke-related messages before and after implementation of the CIAA in July 2003.

Moving forward, the program should develop a long-range media plan that includes messages consistent with best practices (e.g., strong emotional content) and that is designed to be coordinated with other aspects of the program as recommended by the Task Force on Community Preventive Services.

### ***Enforcement***

In 1997 and 2000, the New York ATUPA was amended to strengthen penalties for those who sell cigarettes to minors. The Act requires retailers to obtain positive proof that the person buying the cigarettes is over age 18. Retailers found in violation of this law are subject to fines and loss of their tobacco registration and lottery license for repeated violations. The law also limits the location of vending machines and the placement of tobacco products and limits the venues in which free tobacco products can be distributed.

***Exhibit 4-7*** provides historical data on vendor noncompliance. These data show that the noncompliance rate was nearly cut in half since 1997–1998 to 10 percent. New York State conducts

**Exhibit 4-7. Statewide Vendor Noncompliance Rate**

<b>Program Year</b>	<b>Noncompliance Rate</b>	<b>Number of Jurisdictions Out of 44 with 5 Percent or Less Noncompliance Rate</b>
1997–1998	19.5%	15
1998–1999	17.1%	12
1999–2000	12.1%	14
2000–2001	9.2% (10.6%)	25 (19)
2001–2002	10.1% (10.4%)	27 (26)

Note: Rates are based on total enforcement actions, except for values in parentheses, which are based on sales to minors specifically. Sales to minors are reported beginning in the 2000–2001 program year.

two types of compliance checks: (1) checks to ensure compliance with prohibiting sales of tobacco products to minors and (2) checks to ensure compliance with other regulatory requirements. Checks for sales to minors are carried out with an underage youth who attempts to purchase cigarettes. Checks for other regulatory requirements are conducted by an adult who checks the location of tobacco products (must be behind a counter or in a locked container), verifies that the business has a current tobacco registration, verifies that a business with a suspended or revoked registration is not selling tobacco or herbal cigarettes, checks that bidis are sold only at tobacco businesses, and looks for the proper signage. Compliance rates are calculated by dividing the number of enforcement actions for each type of check by the number of each type of check.

Although the program has made steady progress since its inception, research indicates that youth enforcement efforts may only curb youth smoking when noncompliance rates are below 10 percent (DiFranza, Carlson, and Caisse, 1992; Jason et al., 1991), suggesting that a continuing downward trend in New York's enforcement program should impact youth smoking in the future. In Section 6.6, we examine whether ATUPA efforts have affected youth access to tobacco and youth smoking rates in New York State.

#### **4.2.3 Stakeholder Comments**

Overall, there was a strong consensus that the current programmatic priorities and approach are appropriate. Very few suggested changing the current program priorities or funding allocation. We asked stakeholders to rank programmatic priorities using CDC's eight best practice categories:

- Community programs
- Statewide programs
- Countermarketing
- School programs
- Cessation programs
- Chronic disease programs
- Enforcement
- Surveillance and evaluation

Overall, the most frequently stated top priorities were countermarketing and community programs, followed by cessation. School, chronic disease, and enforcement efforts were most commonly ranked toward the bottom.

In terms of funding for the program, there was a consensus that the program should at least have the CDC minimum recommended funding level or roughly twice the current funding level. However, a few noted that they were pleased that the program has sustained funding during tough fiscal times. Evidence from a number of states with comprehensive tobacco control programs indicates that investments in such programs pay off in terms of decreased tobacco use. In addition, a recent national study shows that there is a dose-response relationship between funding for tobacco control and declines in cigarette sales, controlling for other important factors, such as cigarette excise taxes and cross-border sales (Farrelly, Pechacek, and Chaloupka, 2003).

We asked all stakeholders to give their frank assessment of the program's foremost strengths and weaknesses. Virtually all stakeholders indicated that the major strength of the NYTCP is the director of the NYTCP. One stakeholder summarized her strengths as follows:

*"She is well respected in her field and has an encyclopedic knowledge of tobacco control. She is also open to new ideas."*

The community programs were also frequently mentioned as a program strength. Several stakeholders noted that the community partnerships have improved as a result of the program's direction—they have become better coordinated and more effective.

In term of program weaknesses, the program's countermarketing efforts were consistently cited as problematic. One stakeholder summarized the situation as follows:

*"...the countermarketing campaign has been timid in the kinds of messages allowed to be put out. There is low penetration and the messages are ineffectual. Countermarketing provides vital support to everything, but here, it's AWOL. It has in no way been coordinated with other program activities."*

The general consensus is that the program's approach to countermarketing has been ineffective. The stakeholders consistently reported that the program's countermarketing efforts are hindered by a complex approval process that results in ineffective ads that neither garner the attention of the target audiences nor arouse the response that is necessary to stimulate changes in attitudes, beliefs, and behavior. These statements are supported by RTI's analysis of the media messages aired from July 2003 to June 2004.

Finally, we asked stakeholders to summarize what they thought the biggest accomplishments of the program have been in the past year. The two most commonly mentioned accomplishments were giving indirect credit to the program for passage of the CIAA (as a result of its community education and mobilization efforts) and strengthening the focus and direction of local community partners. Other accomplishments included increasing cessation efforts with the new Cessation Centers, enhancing the Quitline, and maintaining funding for the program.

Another commonly mentioned barrier was a perception of a lack of support for the program at higher levels of government. That said, many stakeholders stated they were thankful to the Governor and legislators for their support of key legislation (e.g., CIIA) and funding for the program in times of tight state budgets.

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### **4.3 SUMMARY OF PROGRAMMATIC APPROACH AND IMPLEMENTATION**

Overall, the program's strategic approach to use evidence-based interventions is very well supported in the peer-reviewed literature and by federal guidelines and recommendations. One possible exception is the enforcement program, which is required by state and federal law. Although CDC guidelines clearly support state efforts to enforce sales to minors laws, the current evidence would suggest that the state's current efforts to enforce youth access laws are unlikely to curb youth access to cigarettes or discourage youth smoking. We note that, as with many program components, funding for enforcement is well below the CDC recommended minimum. In addition, if noncompliance continues to drop steadily, the literature suggests that this may begin to have an impact on youth access and smoking.

We also asked stakeholders to comment on the strengths and weaknesses of the program. There was nearly universal agreement that Dr. Ursula Bauer, the director of the NYTCP, is the program's biggest asset. Others noted the strength of the community programs.

While specific strengths were noted, stakeholders focused on two key weaknesses: an ineffective countermarketing program and "political interference" in program activities, especially countermarketing. Many of the stakeholders believed that the program has a good plan but is not given enough authority to carry it out.

With respect to program implementation and barriers to implementation, we noted a gap between program funding and expenditures. Some evidence suggests that delays in the contracting process may contribute to the program's inability to

expend all of its resources. This is supported by a state audit and stakeholder comments.

At this time, the evaluation is not in a position to comment extensively about program implementation and the quality of current program activities. We have noted that the Quitline was implemented soon after the program began, and call volume has steadily increased and customer satisfaction is high.

With respect to the countermarketing campaign, both the stakeholders and our own review of the existing literature suggest that the program is missing an opportunity to have a large impact on program outcomes by consistently implementing media campaigns with messages that elicit strong emotional responses. Stakeholders suggest that the ad approval process leads to ineffective, "low impact" ads.

# 5

## **Independent Evaluation of New York's Tobacco Control Program**

RTI's independent evaluation contract was fully executed on March 31, 2003. During the first contract period (from March 31, 2003, to January 14, 2004), the primary activity included developing a comprehensive evaluation plan for the program. The comprehensive evaluation plan described a series of studies, data collection activities, and enhancements to existing surveillance and evaluation tools that would permit a thorough evaluation of the program. In Section 5.1, we present a brief summary of the evaluation approach. Other key activities in the first year included designing and implementing a statewide Adult Tobacco Survey (ATS) and conducting a study of hospitality workers' exposure to secondhand smoke.

During the second year of the contract (January 15, 2004, to date), RTI continued to implement the recommended studies and activities outlined in the comprehensive evaluation plan. To date, these have included the following:

- Quarterly waves of the ATS
- Health care provider and organization surveys
- Community activity Web-based tracking system
- Longitudinal evaluation survey of youth
- News media (clipping) tracking study to monitor tobacco-related news articles

- Monitoring cigarette advertising and promotional activities in retail environments
- Data analysis

In this section, we provide an overview of the comprehensive evaluation plan and its constituent studies. The following chapters (6 and 7) present evaluation findings to date, a discussion of the evaluation findings, and conclusions.

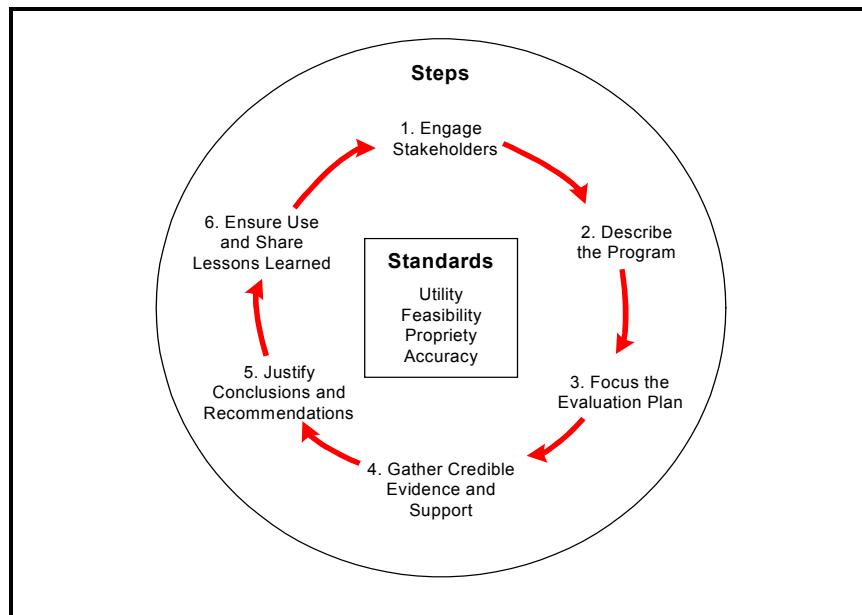
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## 5.1 COMPREHENSIVE EVALUATION PLAN OVERVIEW

In the first year of the contract, RTI developed a comprehensive evaluation approach for the New York Tobacco Control Program (NYTCP). We believe this approach is essential to (1) determine whether and to what extent NYTCP intervention strategies are effective in reducing tobacco use and its health and economic consequences and (2) gather valuable data that can inform the continuing improvement and high-quality performance management of the program. Using the CDC's "Framework for Program Evaluation" (1999) (*Exhibit 5-1*) as a set of organizing principles and approaches for our work, the evaluation is intended to be sensitive to all phases of the NYTCP interventions—from initial design, through implementation, to shorter-term and longer-term outcomes. We want to understand how activities are being conducted and how successful they are in meeting their objectives. In addition, because it is often not possible to see changes in ultimate program goals in the short-term, it is necessary to identify upstream indicators of program impact.

We have used several basic principles, seeking to ensure that the evaluation design is *parsimonious* (e.g., by using existing data where they help to answer evaluation questions), that it *triangulates* on NYTCP process and outcome measures (e.g., through a variety of data collection strategies), and that it is *comprehensive* (e.g., by addressing each goal and each logical step toward the ultimate program outcomes). Our approach (1) includes various theory-based short-term and intermediate outcomes likely to ensue from NYTCP interventions in the early years, (2) addresses social environmental factors (e.g., pro-tobacco advertising, media messages about tobacco) likely to



**Exhibit 5-1. CDC's Framework for Program Evaluation**

Source: Centers for Disease Control and Prevention (CDC). 1999. "Framework for Program Evaluation in Public Health." *Morbidity and Mortality Weekly Report* 48(RR11):1-40.

affect program outcomes, and (3) takes full advantage of existing data sources (e.g., ATS, Behavioral Risk Factor Surveillance System [BRFSS], Current Population Survey [CPS] Tobacco Use Supplements, tax-paid sales data, Youth Tobacco Survey [YTS]) and builds on these to create a strategy for gathering all data needed to measure program activities from inception through various stages of outcomes.

CDC's evaluation framework outlines a number of steps in developing and implementing an evaluation. The first step, engaging stakeholders, was described in Chapter 4. The second step involves describing the program. To accomplish this, RTI reviewed the NYTCP's strategic plan, met with NYTCP staff in-person and by telephone, and reviewed relevant program documents. Based on this understanding, we mapped programmatic goals and objectives to program activities and outputs to short-, intermediate-, and long-term indicators. This information, summarized in evaluation planning matrices for each of the four programmatic goals, outlined all of the required data to implement a comprehensive evaluation plan. These matrices provided a road map for evaluation activities and permitted an assessment of the required data for

evaluation. Ideally, the data collection instruments should provide the following:

- Sensitive measures of exposure to program activities for all program goals:
  - Measures of potential exposure to the program
  - Measures of overall awareness
  - Measures of awareness of specific activities
- Timely feedback to program coordinators:
  - Information on exposure to program activities to various audiences
  - Information on awareness of exposure to the program
  - Information on reactions to program activities
- Sensitive measures of program effects, which typically require the following:
  - Sensitive measures of expected short-term and intermediate program effects (knowledge, beliefs, attitudes, and intentions)
  - Sensitive measures of expected longer-term program effects (smoking behaviors)
- Rigorous control for confounding factors, including the following:
  - Concurrent interventions (such as increases in the cost of tobacco, school-based and community antitobacco programs)
  - Differences in target audience background (e.g., age, gender, race/ethnicity, school performance, parental smoking)
  - Differences in context of individuals (e.g., control for observed and unobserved characteristics of schools, communities)
  - Secular trends

Clearly, the needs of evaluation are extensive and despite the wealth of available data, additional surveillance and monitoring systems are needed to fully implement a comprehensive evaluation. Based on findings from the evaluation planning exercise described above, we made cross-cutting recommendations for new studies and enhancements to the surveillance and monitoring systems. In the following

subsections, we briefly describe the various existing data systems, evaluation studies, and new data collection activities, organized by program goal, that inform this comprehensive evaluation.

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## **5.2 EVALUATION STUDIES AND DATA COLLECTION ACTIVITIES**

### **5.2.1 Cross-Cutting Evaluation Studies and Data Collection Activities**

The following surveillance and evaluation systems collect data that are relevant to multiple program goals. They include newly developed systems and systems that were established two decades ago or longer. The systems recently developed as part of the evaluation include the ATS, a system to monitor the progress of program-funded community partners, a community-based case study to better understand tobacco control activities at the local level, and a news clipping service for monitoring tobacco-related news articles.

We also rely on longer-standing systems to evaluate the program, such as the BRFSS, the CPS, tax-paid cigarette sales data, and the YTS. These systems are a helpful complement to the ATS because they permit an examination of trends in tobacco-related outcomes before the program was implemented and with other states. This allows us to more effectively understand the impact of the program.

#### ***Adult Tobacco Survey***

The ATS was initially developed by CDC and then adapted to the needs of New York by the program in partnership with RTI. The survey was first fielded on June 26, 2003, by RTI. The target population for the ATS is adults aged 18 and older living in residential households in New York. The purpose of the ATS is to monitor progress toward program goals by measuring tobacco use behaviors, attitudes, and related influences on tobacco use. In addition, the survey monitors awareness and use of NYTCP activities and services.

**Survey Design and Data Collection.** The ATS is a random-digit-dial (RDD) telephone survey designed to produce statewide representative samples of New York adults aged 18

and older. In order to provide timely surveillance of program activities and targeted outcomes, the ATS is collected on a quarterly basis and includes approximately 2,000 New York adults in each quarterly survey.

The sample follows a stratified dual-frame design. The two frames were defined as (1) an RDD frame and (2) a residential listed frame. This kind of design provided a representative sample while increasing the "hit rate" of current residential units to improve data collection efficiency. The list-based frame also ensured that lead letters reached more households, and more potential respondents, than would be reached with only an RDD frame. Each household was then screened to determine the number of adults aged 18 and older and the smoking status of each adult (nonsmoker or smoker). The household screener then followed an algorithm to randomly select smoking adults at a much higher rate (80 percent) than nonsmoking adults to increase the proportion of smokers in the sample. Once households were screened and the appropriate respondent identified, interviewers either conducted the interview immediately or scheduled a callback time that was more convenient for the respondent.

**Content and Measures.** The domains that are measured in the ATS are summarized in **Exhibit 5-2**. The first two sets of domains for awareness of program activities and policy factors include the primary measures used to assess whether the NYTCP activities are achieving sufficient levels of exposure and utilization among the adult population, whereas the remaining domains summarize the measures used to monitor changes in NYTCP-targeted outcomes over time.

#### ***Current Population Surveys–Tobacco Use Supplements***

Supplements to the CPS have contained questions pertaining to tobacco use since 1985. The 1985 and 1989 supplements had few tobacco-related questions, but beginning in 1992, the surveys contained detailed questions on tobacco use, smoking cessation, and other tobacco-related attitudes, policies, and programs.

**Exhibit 5-2. Evaluation Questions and Analysis Domains in the ATS**

Evaluation Question	Domains
What is the current level of awareness, exposure, and use of NYTCP activities and services, and has exposure increased over time?	<ul style="list-style-type: none"> <li>▪ General awareness of antismoking advertising or information</li> <li>▪ Awareness of specific NYTCP ads</li> <li>▪ Awareness and use of the New York Quitline</li> <li>▪ Awareness of specific tobacco issues in advertisements (e.g., nicotine replacement therapies [NRTs], dangers of secondhand smoke)</li> <li>▪ Health care coverage and support for treatment</li> <li>▪ Exposure to information from health care providers</li> <li>▪ Awareness of and participation in "Quit and Win" contests in New York</li> </ul>
What is the current state of the tobacco policy environment in New York, and has it changed over time?	<ul style="list-style-type: none"> <li>▪ Self-reported changes in workplace smoking policies</li> <li>▪ Awareness of and support for New York CIA laws</li> </ul>
Are attitudes, beliefs, and knowledge about smoking and secondhand smoke changing in the desired direction over time?	<ul style="list-style-type: none"> <li>▪ Intentions to quit smoking</li> <li>▪ Perceptions about potential health risks from smoking</li> <li>▪ Perceptions about the dangers of secondhand smoke to others</li> <li>▪ Perceptions of whether and how secondhand smoke is bothersome</li> <li>▪ Support for New York CIA laws and policies</li> </ul>
Are program-targeted behaviors such as current cigarette use, purchasing patterns, cessation attempts, and smoking at home changing in the desired direction over time?	<ul style="list-style-type: none"> <li>▪ Current level of cigarette use</li> <li>▪ Purchasing patterns/brand switching</li> <li>▪ Frequency and duration of cessation attempts</li> <li>▪ Cessation strategies</li> <li>▪ Use of NRTs, potentially reduced exposure products, and medications</li> <li>▪ Smoking at home</li> <li>▪ Changes in home/car smoking bans</li> <li>▪ Changes in visitation to bars/restaurants</li> </ul>

**Survey Design and Data Collection.** The CPS is a monthly survey of approximately 50,000 households conducted by the U.S. Census Bureau. Household members who are 15 years of age and older are interviewed to gather information about labor force characteristics, such as employment status, earnings, and hours of work; and demographic characteristics, such as age, gender, income, marital status, and educational attainment. Each household is interviewed once a month for 4 consecutive months and then interviewed again 1 year later for the same corresponding time period.

As part of the basic monthly survey, the Smoking and Immunization Supplement was administered in September 1985 and the Cardiovascular Disease Risk Factors Supplement was administered in September 1989 by the U.S. Census Bureau. The Tobacco Use Supplements, which are sponsored by the National Cancer Institute (NCI), have been administered in 1992–1993, 1995–1996, 1998–1999, 2000, and 2001–2002. Participation in the CPS supplements differed from the basic monthly survey. CPS household members who were eligible to respond to the supplement's questions (ages 16 and older for the Smoking and Immunization Supplement, ages 15 and older for all other supplements) could either answer by self or by proxy. Self-respondents were eligible for the entire supplement, whereas proxy respondents were only eligible to respond to certain questions.<sup>1</sup> For this report, the sample was restricted to self-respondents ages 18 and older.

**Content and Measures.** All of the CPS supplements included questions addressing current use of tobacco products. However, questions addressing smoking cessation (e.g., number of quit attempts made in the past year) and other tobacco-related issues, such as workplace smoking policies and programs, rules about smoking in the home, and attitudes toward public smoking restrictions, were only available in the 1992–1993, 1995–1996, 1998–1999, and 2001–2002 Tobacco Use Supplements.

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<sup>1</sup>Proxy respondents can only answer questions concerning lifetime smoking (has the person ever smoked 100 cigarettes in his or her lifetime), age when the person first smoked a cigarette, current smoking status, and lifetime and current use of other tobacco products (cigars, pipes, chewing tobacco, snuff).

Smoking prevalence is determined from the question “Does. . . now smoke every day, some days, or not at all?” Respondents are considered current smokers if they stated that they now smoke every day or some days and are considered nonsmokers if they stated not at all or have never smoked at least 100 cigarettes in their lifetime. Several aspects of smoking cessation, such as intentions to quit, quit attempts, and the length of time it has been since former smokers have completely stopped smoking cigarettes, are also addressed in the survey. For the purposes of this report, we focused on four measures of smoking cessation: prevalence of quit attempts, prevalence of intentions to quit smoking within the next 6 months, prevalence of intentions to quit smoking within the next 30 days, and prevalence of employer-provided cessation programs.

Among current everyday smokers, the prevalence of quit attempts is defined as having responded yes to the question “During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?” Among all current smokers, two questions address intentions to quit smoking. First, current smokers are asked “Are you seriously considering stopping within the next 6 months?” Current smokers who responded yes were further asked “Are you planning to stop within the next 30 days?” Among all current smokers, the prevalence of intentions to quit within the next 6 months and the prevalence of intentions to quit within the next 30 days are defined as having responded yes to the respective questions. Finally, among indoor workers, the prevalence of employer-provided smoking cessation programs is based on having responded yes to the question “Within the past 12 months, has your employer offered any stop smoking program or other help to employees who want to quit smoking?”

In addition to addressing tobacco use and tobacco-related behavior (e.g., smoking cessation), the 1992–2002 CPS Tobacco Use Supplements addressed several other tobacco-related issues, such as workplace smoking policies and programs, rules about smoking in the home, and attitudes toward public smoking restrictions. Indoor workers were asked

whether their workplace has an official smoking policy, the types of smoking restrictions in work areas and common areas, and whether someone had recently smoked cigarettes in their work area. Attitudes toward public smoking restrictions were assessed by asking respondents whether they think smoking should be allowed in all areas, allowed in some areas, or not allowed at all in six public places: restaurants, hospitals, indoor work areas, bars and cocktail lounges, indoor sporting events, and indoor shopping malls. For this report, we focused on the prevalence of adults who think that smoking should be banned in restaurants, indoor work areas, and bars and cocktail lounges.

Demographic indicators included in our analyses are age (in years), gender (male), race/ethnicity (non-Hispanic African-American, Hispanic, other race, ethnicity missing; reference group is non-Hispanic Whites), income (six categories plus an indicator that income is missing; reference group is the highest income category [\$50,000 or more]), labor force status (not working but in labor force, not in labor force; reference group is working), marital status (divorced, widowed, separated, never married; reference group is married), and educational attainment (no high school, high school dropout, some college, college graduate, post-graduate; reference group is high school graduate).

### ***Behavioral Risk Factor Surveillance System***

The BRFSS has contained questions pertaining to tobacco use since inception, but the specific content has changed throughout the years. We, and the NYTCP, rely on the BRFSS as a consistent measure of the prevalence of smoking among adults ages 18 and older.

**Survey Design and Data Collection.** The BRFSS is a cross-sectional survey of the adult, civilian noninstitutionalized population ages 18 and older. It was established by the Centers for Disease Control and Prevention (CDC) in 1984 with the goal of collecting uniform, state-specific data on preventive health practices and risk behaviors. In that year, 15 states collected surveillance data through monthly telephone



interviews. Since 1995, 50 states, the District of Columbia, and three territories have participated in the survey.<sup>2</sup>

The BRFSS field operations are managed by state health departments with guidelines provided by the CDC. These health departments participate in developing the survey instrument and conduct the interviews either in-house or through the use of contractors. The BRFSS questionnaire is comprised of three sections: the core component, optional modules, and state-added questions. All states use the core component, while individual states can choose to include the optional modules and state-added questions. The content of the optional modules is developed by the CDC, whereas the state-added questions are developed or acquired by individual states.

**Content and Measures.** Since 1985, the BRFSS has collected information on smoking prevalence, which was the outcome of interest for our analyses. For the period 1985 to 1995, smoking prevalence was determined from the question "Do you smoke cigarettes now?" Respondents were considered current smokers if they responded yes and were considered current nonsmokers if they responded no. From 1996 to present, smoking prevalence was determined from the question "Do you now smoke cigarettes every day, some days, or not at all?" Respondents were considered current smokers if they stated that they smoked every day or some days and considered current nonsmokers if they stated not at all.

The BRFSS also includes information on the respondent's age, education, race/ethnicity, income, marital status, and employment status.

### ***Youth Tobacco Surveys***

The New York YTS is a school-based survey of middle and high school students in grades 6 through 12 in New York State and is representative of the student population in that state. It employs an anonymous, self-administered questionnaire and includes questions that relate to tobacco use; access to tobacco and related products; knowledge, attitudes, and beliefs about

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<sup>2</sup>We excluded the territories from the analysis data set.

tobacco products; and media messages relating to these products and their use.

**Survey Design and Data Collection.** The 2000 and 2002 New York YTS surveys contain data on approximately 9,000 students from 80 schools for each year. The surveys use a multistage, stratified cluster design, and sample weights were accordingly created to account for nonresponses, the probabilities of selection, and school and statewide enrollments.

The National Youth Tobacco Survey (NYTS) is the national counterpart of the YTS. It was the first nationwide survey to measure various forms of tobacco use among middle school and high school students. It emerged in response to questions relating to the increase in tobacco use among youth in the preceding decade. The NYTS uses a three-stage stratified cluster design. In the first stage, primary sampling units (PSUs), each containing a large county or a set of smaller adjacent counties, are selected and following this, a subset of these PSUs is selected based on their degree of urbanization and geographic location. In the second stage, schools are selected from these PSUs, and the probability of selection is proportional to the weighted school enrollment. Schools with a larger proportion of Hispanic or African-American students were selected at a higher rate. The last stage involves selecting five intact classes of a required subject (e.g., English) in grades 6 through 12 in each of these schools. Weights are then created to account for the oversampling, the nonresponses, and the varying probability of selection. The 2000 and 2002 NYTS surveys contain data on 25,000 to 30,000 students from approximately 330 schools in each year. In 2002, 13 schools from the NYTS were also present in the YTS sample.

**Content and Measures.** Both the YTS and the NYTS are used to compare current smoking, lifetime smoking, and frequent smoking among middle school and high school students in New York State and the rest of the country. In addition, we summarize several factors that have the potential to influence youth smoking rates, such as youth access to tobacco products, self-reported cigarette prices, exposure to school-based smoking education programs, participation in community-based

programs, and awareness of antitobacco advertising on television and radio.

### ***Tax-Paid Cigarette Sales Data***

Tax-paid cigarette sales data can be a timely measure of smokers' response to policies and programs because they are available on a monthly and annual basis. Monthly data for New York can be obtained directly from New York State, whereas data from other states are obtained from the *Tax Burden on Tobacco* series, an historical compilation of cigarette sales, taxes, and prices (Orzechowski and Walker, 2002).<sup>3</sup>

From total cigarette sales, we calculate per capita cigarette sales (in packs), determined by dividing state tax-paid cigarette sales by state population estimates provided by the U.S. Census Bureau. Annual cigarette sales correspond to fiscal year ending June 30, and cigarette taxes are adjusted for inflation (2002 dollars). Because tax-paid sales do not necessarily reflect actual consumption due to tax evasion and cross-border and American Indian reservation purchases, we make adjustments that can account for some of these factors in our analysis.

### ***Program Monitoring and Activity Reporting***

To monitor and evaluate the NYTCP's community-level activities, RTI is developing a Web-based program activity reporting system (the Community activity tracking, or CAT) in collaboration with the NYTCP. The purposes of the CAT system are to (a) allow Community Partners (i.e., Community Partnerships, Youth Partners, Cessation Centers) to efficiently document critical dimensions of Partners' strategies and the immediate outputs of those strategies and (b) allow NYTCP staff at various levels to review any Partners' specific plans or strategy reports and to call up reports aggregating data for an individual Partner or across multiple Partners (e.g., by Partner type, geographic area, specific time period).

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<sup>3</sup>Through 1998, the *Tax Burden on Tobacco* was produced by the Tobacco Institute, which was disbanded by the Master Settlement Agreement (MSA), along with all other tobacco industry trade groups. The Tobacco Institute reconstituted itself as the economic consulting firm of Orzechowski and Walker in 1999 and continues to produce the *Tax Burden on Tobacco*.

Beyond these monitoring and reporting functions, the CAT will (c) assist RTI and the NYTCP in evaluating the overall tobacco control program and specific elements of the program. Process data from the CAT will be used to help explain the results observed through outcome measures, such as the ATS and the YTS.

Initially, RTI reviewed similar systems that have been developed in other states, including CATALYST (Washington State), OTIS (California), PTS (North Carolina), TPRS (Pennsylvania), and others. The new Chronicle system, developed by the CDC, was also studied carefully to determine how CAT might best lend itself to Chronicle reporting tasks.

RTI then compiled lists of research questions and the variables necessary to answer each question, organized by the NYTCP strategic plan goals and objectives. Once complete, the variables were then categorized by the most effective collection method: through CAT or another method.

CAT's basic modules were determined to be (1) annual work plan entry and program strategy reporting, (2) evaluation plan entry and evaluation activity reporting, (3) report generation, (4) administrative (security and user access), and (5) technical assistance for users. This system should be fully operational in the fall with Community Partner training scheduled for November 29, 2004.

### ***Community Sentinel Site Study***

The overall success of the NYTCP will, to a large extent, depend on the success of local Community Partners. States such as California, Florida, and Massachusetts have made a strong commitment to community-based initiatives because they believe that these programs are the "glue" that binds the entire tobacco control program. In addition to the process data that will be captured in the CAT system, RTI will be conducting a community-based case study to better understand community-level tobacco control efforts in New York.

For example, the program is relying on its Community Partners to ensure implementation of policies such as the Clean Indoor Air Act (CIAA). For the CIAA alone, Community Partners are

expected to facilitate local implementation of this law. These community-level efforts are extremely complex and have often not been sufficiently monitored and studied in a manner that allows for a complete understanding of how they affect program outcomes. A commonly cited weakness in current evaluations of community-based health promotion programs is the lack of qualitative data that can provide details on the context within which programs are working or not and help to facilitate ongoing program improvement.

To understand the context within which local tobacco initiatives are being implemented and how this context interacts with tobacco control efforts, RTI is developing and implementing a 4-year case study in collaboration with NYTCP staff. The intent of the study is to

- examine the context within which tobacco initiatives are operating,
- explore how tobacco control efforts interact with the community context,
- measure the process of change within the selected communities, and
- identify the key features within the communities that impact their ability to achieve change.

The sentinel site study for the NYTCP will be conducted in two phases. During Phase I, we studied five counties in-depth to understand the following:

- Health status of the community related to tobacco control and other public health issues
- History of addressing tobacco use and related behaviors or diseases
- Barriers the community has experienced in addressing tobacco control
- Opportunities the community has identified in developing tobacco control initiatives
- Lessons learned about the most advantageous structure and partners to involve in local initiatives

We are now using this information to inform the development of a case study conducted in Phase II. This case study may continue to focus on activities across four of the five initial counties or could include up to eight communities within four

counties. Primary issues to address in years 2 through 4 include the following:

- Factors that promote success and barriers encountered
- Key ingredients to effective tobacco control programming (e.g., presence of a local program champion)
- Lessons learned in implementing initiatives (e.g., when A, B, and C are present, then they need to have D, E, and F to be successful)

Key insights from this study can lead to improvements in existing activities at the local level and suggest new opportunities for intervention. Given the program investments in community-level activities, this study is of critical importance for the evaluation.

### ***News Media Tracking***

Media advocacy is an important component of the NYTCP's strategic plan. To evaluate the effectiveness of media advocacy in achieving the program's goals, RTI, in collaboration with NYTCP staff, created a news media tracking protocol outlining data sources, inclusion and exclusion criteria, search strategy, and coding procedures to monitor reports published in the print news media.

News media tracking data can show the extent of news media coverage of NYTCP efforts and may indicate how news media coverage is helping or hindering NYTCP objectives. In addition, the data can help answer questions concerning how the effects of news media coverage of NYTCP program components and activities translate to short-term, intermediate, and long-term program objectives. The news media tracking data are primarily useful for program goals relating to the elimination of exposure to secondhand smoke and reducing the social acceptability of tobacco use, but they also capture relevant information across a wide range of themes. Based on our coding scheme, which is described in Chapter 6, the following primary themes are relevant to the NYTCP strategies:

- Secondhand smoking and related smoke-free policies
- Tobacco advertising, promotion, and sponsorship
- Tobacco consumption

- Education, prevention, and cessation campaigns
- Economics (e.g., cigarette prices)

News media coverage data are collected by Burrelle's Luce New York Clipping Service (Burrelle's). RTI has worked closely with Burrelle's to clarify and focus the inclusion/exclusion criteria, listed below, and the search strategy to ensure that we are only collecting the most relevant articles. Our inclusion and exclusion criteria are as follows:

*Inclusion criteria:*

- Print newspapers—daily, weekly, and monthly publications
- New York publication (written and distributed in New York only)
- Must be written in English
- Movie reviews, restaurant reviews, editorials, and cartoons

*Exclusion criteria:*

- Advertisements, penny savers, and shopping guides
- Police reports, photographs without stories, or obituaries
- Magazines, radio, and television broadcasts
- Non-New York publications
- Articles that cover tobacco issues outside of New York (as in the case of border newspaper publications)
- Articles from the *Wall Street Journal*, *USA Today*, *Christian Science Monitor*
- "Calendar Events," such as announcements of cessation classes
- "One-line" (irrelevant) mentions of smoking or tobacco that are not in conjunction with tobacco control terms

Relevant articles were identified using the three-tiered approach used in the American Stop Smoking Intervention Trial (ASSIST) evaluation (Evans et al., 2003). The first tier included tobacco keywords, the second tier included restriction/legislative terms, and the third tier included policy-related keywords.

**Exhibit 5-3** presents a three-tiered approach tailored to the needs of the evaluation. This system generally follows the

**Exhibit 5-3. NYTCP Three-Tiered Approach**

<b>Tier 1 Tobacco</b>	<b>Tier 2 Restriction/Legislative/ Intervention</b>		<b>Tier 3 Other</b>
Chewing tobacco	NYTCP/Tobacco Control Program	Addiction	Public places
Cigar	Clean Indoor Air Act	Adolescents	Pubs
Cigarette(s)	Tax	Advertising	Quit/Quitting
Nicotine	Adolescent Tobacco Use Prevention Act	Bars	Restaurants
Smoking	Medicaid coverage of pharmacotherapy for cessation	Big Tobacco	Retailer
Smoke	Cigarette fire safety law	Bowling alley	School(s)/University/College
Smoke-free	Cigarette shipping law	Buy 1 get 1 free	Secondhand smoke
Smokeless tobacco	Ban/banned/banning	Cancer	Social acceptability
Snuff	Bill	Cessation	Social norms
Tobacco	Check-it	Children	Sponsorship/sponsored
	Compliance checks/sting operations	Coalition	Taverns
	Control	Cost	Teens
	Department of Health	Disease	Tobacco industry
	Health department	Dormitory	Vending machines
	Indian reservation	Environmental tobacco smoke	Web
	Influence	Event sponsor/sponsor	Workplace(s)
	Law/lawsuit	Health	Youth
	Legislation/legislative/legislator	Health Care	
	Limit/limits/limitations	Hollywood	
	Media campaign	Illness	
	Ordinance	Internet	
	Policy	Magazines	
	Prohibit/prohibition	Manufacturer	
	Reality Check	Marketing	
	Regulation/regulatory	Minor(s)	
	Restrictions	Movie	
	Stick it to 'Em	Pharmacy	
	Quitline/Quit-line	Promotion	
	Waiver	Public Health	



ASSIST format of three tiers, with one for general tobacco-related terms, one including legislative/regulatory words (and intervention keywords), and the third category for all other keywords of interest. Unlike the ASSIST evaluation, we included articles for analysis that include a keyword from tier one and one keyword from tier 2 AND/OR tier 3 because we are interested in more than just policy-related news.

Data collection for this task began on February 1, 2004. To date, more than 1,000 relevant articles have been identified per month. In Chapter 6, we summarize the primary themes and slant (pro- or antitobacco or neutral) of recent news coverage of tobacco issues in New York State.

### **5.2.2 Evaluation Studies and Data Collection Activities in Support of Goal 1: Eliminate Exposure to Secondhand Smoke**

In addition to the various surveillance and other systems described above that provide most of the data to assess progress toward goal 1, we describe a few studies below that were designed and implemented to evaluate the CIAA.

#### ***Observational Studies of Compliance with the CIAA***

On March 26, 2003, the New York State legislature passed and the governor signed into law amendments to the statewide CIAA (Chapter 13 of the Laws of 2003) that prohibit smoking in all places of employment, including restaurants, bars, and bingo and bowling facilities. The law limits exemptions to retail tobacco businesses, membership associations where no compensation is provided for on-premises services, hotel rooms rented by one or more guests, existing cigar bars, and outdoor seating areas of bars. The law went into effect on July 24, 2003.

To monitor compliance with the CIAA, the NYTCP has worked with Community Partners to do direct observation of compliance in restaurants, bars, and bowling facilities prior to and following implementation of the new law in July 2003. Working with the Center for a Tobacco Free New York, the Community Partners completed a pre- and post-test observational study (prior to implementation of the law and 3 months afterwards) in restaurants, bars, and bowling facilities

on specified days and during specific times of day using a standard assessment tool for observations.

Five venues from each of the 62 counties in New York State, for a total of 310 venues statewide, were randomly selected for unobtrusive observation. Within each county, two restaurants, two bars, and one bowling facility were selected. The population of hospitality venues was defined as those restaurants, bars, and bowling facilities listed in an electronic business pages listing (Reference USA), and random selection occurred within county by venue.

A standardized observational instrument was developed for each of the three venue types: restaurants, bars, and bowling facilities. Routine information about the facility and the observation, including location, seating capacity, time and day of observation, and name of observer, was collected. Observations were made in several locations within each venue, when applicable. For example, in restaurants, observations were made in indoor and outdoor dining areas, bar areas, and waiting areas. In bars, separate observations were made in bar areas, dining areas, and any outdoor seating areas. In bowling facilities, observations were made in the concourse area, defined as the area in and around the bowling lanes, dining areas, and bar areas.

Specific indicators reported in this study include observation of smoking, presence of ashtrays, visibility of cigarette smoke, presence of cigarette smoke odor, smoking-related signage, and presence of tobacco industry promotional items. Additional indicators will be discussed in future reports.

Observations were conducted by locally-funded partners of the NYTCP. Observers were provided a specific set of instructions for completing the observational checklists and were provided face-to-face instructional training by the Center for a Tobacco Free New York. Observations at restaurants and bars were conducted on Thursday, Friday, or Saturday evenings. Observations in bowling facilities were conducted when the facility was active, regardless of the day of the week. Observers were instructed that facility staff and other patrons should remain blind to the nature of their visit. Observers were

instructed to engage in venue-appropriate behavior so as not to draw attention to their purpose. In addition, if smoking was observed during these visits, observers were instructed that, for the integrity of the study, they were not to report noncompliance activities to any enforcement bodies. Beginning with the 6-month assessment, observers were reimbursed \$20 per venue for the costs related to performing the observation.

Baseline observations were conducted approximately 1 month prior to the law. Follow-up observations were conducted 1, 3, 6, 9, and 12 months following implementation of the law.

### ***Employee Health Study***

To assess the impact of New York's law on exposure to secondhand smoke among current employees of restaurants, bars, or bowling facilities, RTI conducted a brief telephone survey of and obtained saliva specimens from a cohort of such workers prior to implementation of the law and at 3, 6, and 12 months after the law went into effect. The following specific hypotheses were tested: (1) levels of saliva cotinine will decline over time following implementation of the new law; levels will be lower at each data collection point compared to baseline and compared to earlier data collection points; and (2) self-reported variables will change in a similar fashion (e.g., superficial health complaints, observations of smoking in the workplace).

The brief survey assessed self-reported exposure to secondhand smoke in the workplace and other settings, respiratory symptoms in the past 4 weeks using five questions from the International Union Against Tuberculosis and Lung Disease Bronchial Symptoms Questionnaire (wheeze, shortness of breath, morning cough, cough during the remainder of the day or night, phlegm), sensory irritation in the past 4 weeks (eye, nose, throat), and attitudes toward exposure to secondhand smoke.

To be eligible for the study, participants had to be 18 years of age or older; nontobacco users; and current employees of restaurants, bars, or bowling facilities in New York that allowed smoking at the time of the baseline survey. Eligibility was

determined with a brief series of screening questions administered by telephone.

Those eligible for the 3-, 6-, and 12-month follow-up waves of data collection were participants in the baseline study who still worked in a restaurant, bar, or bowling facility. Nonsmokers were eligible for both a telephone interview and a saliva cotinine test. Those who reported that they now smoke, even if only occasionally, were eligible to complete the interview only.

Approximately 3 (6 and 12) months after the baseline survey, each participant was sent a letter inviting him or her to participate in the follow-up. Data collection followed the same procedures as at baseline. Study staff called the participant a few days after the letters were sent. Participants who agreed to participate in this phase of the project were again screened for eligibility. Eligible nonsmokers were sent two saliva sample kits, and an appointment was made for the telephone interview. Study participants who had started smoking since the baseline survey were asked only for an interview. Those who returned the samples received an additional \$20 as a token of appreciation for their time and effort.

For the baseline and 3-month follow-up, we constructed measures of secondhand smoke exposure by calculating the mean cotinine level for the samples collected after each of the two work shifts. We then calculated the maximum cotinine level for these two means. All participants had at least one valid sample to conduct the assay. However, some participants provided only one sample per work shift and/or sample(s) for only one work shift. The constructed maximum cotinine level was based on all valid samples. In addition, although participants were screened for their tobacco use and use of NRTs, some of the cotinine levels suggested active smoking. A cutoff of 10 ng/mL is often used to distinguish nonsmokers from smokers. Although the maximum salivary cotinine level is not precisely known for a nonsmoker exposed to heavy levels of secondhand smoke, such exposure typically produces salivary cotinine levels in the 1 to 10 ng/mL range (USDHHS, 2003).

In a study of exposure to passive smoking among bar staff, Jarvis, Foulds, and Feyerabend (1992) found the median

salivary cotinine level to be 7.95 ng/mL, but the range was 2.2 to 31.3 ng/mL. Jenkins and Counts (1999) estimated a conversion factor that could be used to estimate salivary cotinine levels from workplace-only secondhand smoke nicotine exposures. Their estimated conversion factor was 1.9 ng/mL/ $\mu\text{g}/\text{m}^3$ . Using an estimate from Siegel and Skeer (2003) for nicotine concentrations in bars ( $31.1 \mu\text{g}/\text{m}^3$ ), we calculated a possible exposure of 59 ng/mL. Concentrations for restaurants and bowling alleys are lower, at  $6.51 \mu\text{g}/\text{m}^3$  and  $10.51 \mu\text{g}/\text{m}^3$ , respectively. Therefore, in our study, we excluded those with salivary cotinine levels above 60 ng/mL as likely smokers.

We also constructed a second measure of secondhand smoke exposure based on self-reported hours of exposure. Participants were asked to report their hours exposed to secondhand smoke within the past 4 days at work, home, car, and other locations. To measure total secondhand smoke exposure, we took the summation of all the hours a person reported exposure at any location and at all jobs. This measure was further subdivided into hospitality industry workplace exposure (based on job descriptions) and exposure in all other locations (i.e., nonhospitality jobs, home, car) to examine changes in both environments before and after the smoking prohibition went into effect.

Based on responses to the respiratory and sensory symptom questions from the International Union Against Tuberculosis and Lung Disease Bronchial Symptoms Questionnaire, we created two dichotomous variables—whether study participants experienced any respiratory symptoms and whether they experienced any sensory symptoms—to measure the overall change in symptoms as a result of the law. In addition, we created two symptoms scales using the sum of respiratory or sensory symptoms to measure the average number of symptoms that participants reported before and after smoking was restricted. Findings from the baseline, 3-, and 6-month follow-up studies are summarized in Chapter 6.

### ***Air Monitoring Study in Western New York State***

A study conducted by the Roswell Park Cancer Institute (Roswell Park) assessed the impact of the CIAA on air quality in various hospitality venues in Western New York. The objective was to quantify the change in respirable suspended particles in the air in hospitality venues in Western New York before and after implementation of the smoking regulations on July 24, 2003.

Roswell Park measured the air quality in 18 venues that allowed smoking before July 24, including 7 bars, 7 restaurants, 2 bowling alleys, 1 pool hall, and 1 bingo hall. The air was sampled in the month before the law and again within 3 months after the law went into effect. Venues were selected to provide a broad range of size, location, and type of venue, and air sampling before and after the law was conducted on the same day of the week and at approximately the same time of day.

Cigarettes, cigars, and pipes are major emitters of respirable suspended particles less than 2.5 microns (PM<sub>2.5</sub>) in diameter that are easily inhaled deep into the lungs. The TSI SidePak AM510 Personal Aerosol Monitor was used to measure the PM<sub>2.5</sub> concentration every minute during sampling (*Exhibit 5-4*).

**Exhibit 5-4. Personal Aerosol Monitor**



### ***Hospitalization Data***

New York State maintains a statewide uniform hospital data system. The Statewide Planning and Research Cooperative System (SPARCS) is a comprehensive patient data system established in 1979 as a result of cooperation between the

health care industry and government. Regulations require that inpatient data be submitted by all Article 28 facilities certified for inpatient care and that outpatient data be submitted by all hospital-based ambulatory surgery services and all other facilities providing ambulatory surgery services. All data have to be submitted according to a designated format and schedule. Data elements included in SPARCS relevant to this study are admission date, primary diagnosis, date of birth, gender, race, ethnicity, and county of residence.

These data are a rich source of information about the patterns of health care and the public health burden and cost associated with chronic disease and injury morbidity. As a result, these data can be useful for evaluating the impact of policies and programs on health outcomes such as tobacco-related morbidity and mortality.

For example, a recent study reported an association between implementation of a local law banning smoking in public and workplaces with a significant decrease in numbers of admissions for acute myocardial infarctions (Sargent, Shepard, and Glantz, 2004). To evaluate the potential impact of New York's CIAA, we will analyze monthly hospitalization admissions that occurred through emergency rooms in New York City and New York State for the years 2001 through 2004. We will analyze data for disease entities that may be sensitive to secondhand smoke exposure, including acute myocardial infarction, cerebrovascular disease, angina, and congestive heart failure to determine if admissions changed after CIAA statutes took effect.

### ***Economic Indicators for Assessing the Impact of the CIAA***

In addition to evaluating the impact of the CIAA on health outcomes, we are interested in exploring its potential impact on economic indicators, such as the impact (positive or negative) on the food service and drinking retail businesses. Below, we describe a few data sources that we will examine to begin to understand the impact of the CIAA on economic indicators. This evaluation is conducted primarily by examining trends in indicators prior to and following the CIAA.

**Liquor License Data.** The Division of Alcoholic Beverage Control of the New York State Liquor Authority reports monthly summaries of the number of active liquor licenses by type of license for each county. The data reported are the number of active "on-premises" liquor licenses for each of four months: April 2002, April 2003, April 2004, and May 2004. Special data requests were made of the New York State Liquor Authority for the purposes of this report.

**Alcohol Excise Tax Collection Data.** Alcoholic Beverage Tax data are from the New York State Department of Taxation and Finance reports on statewide monthly collections (<http://www.tax.state.ny.us/collections/>). The data shown are based on reported monthly collections of the Alcoholic Beverage Excise Tax. This tax is levied upon registered distributors and noncommercial importers of alcoholic beverages in New York State. The collections reported do not differentiate whether the alcoholic beverages will be sold in bars, restaurants, or liquor stores. Note: The beer tax decreased 15.625 percent in January 1999, decreased 7.4 percent in April 2001, and decreased 12 percent in September 2003. Tax collections on beer represent between 21 percent and 28 percent of total alcoholic beverage tax collections.

**Food Service and Drinking Industry and Retail Trade Industry Employment Data.** The data analyzed in this report are from the Covered Employment and Wages (ES-202) data set ([http://www.labor.state.ny.us/labor\\_market/labor\\_market\\_info.html](http://www.labor.state.ny.us/labor_market/labor_market_info.html)). This is a census of all employers liable for Unemployment Insurance (97 to 99 percent of total nonagricultural employment). Data are reported quarterly about 6 months after the close of the quarter. The data reported are for the subsector "Food Services and Drinking Places" (NAICS code 722) and its component industry groups: "Full Service Restaurants" (NAICS code 7221) and "Drinking Places" (NAICS code 7224). Industries in the Food Services and Drinking Places subsector prepare meals, snacks, and beverages to customer order for immediate on-premises and off-premises consumption. There is a wide range of establishments in these industries. Some provide food and drink only, whereas others provide various combinations of



seating space, waiter/waitress services, and incidental amenities, such as limited entertainment. The industries in the subsector are grouped based on the type and level of services provided. The industry groups are full-service restaurants; limited-service eating places; special food services, such as food service contractors, caterers, and mobile food services; and drinking places.

Comparable employment data were also obtained from the New Jersey Department of Labor and Workforce Development, which serves as an external comparison for New York State. The employment data are shown "per capita" or number of people employed per 1,000 people in New York or New Jersey. Population estimates for New York and New Jersey are from the U.S. Census Bureau (<http://eire.census.gov/popest/data/states/tables/NST-EST2003-01.pdf>).

### **5.2.3 Evaluation Studies and Data Collection Activities in Support of Goal 2: Decrease the Social Acceptability of Tobacco Use**

In addition to the surveys and data systems noted above that will be used to evaluate progress toward this goal, the evaluation has developed the following study.

#### ***Measuring Pro-Tobacco Advertising and Promotions in the Retail Environment***

Goal 2 objectives and strategies stress the importance of reducing the amount of pro-tobacco promotions and advertising. In coordination with RTI, Community Partners will perform local assessments of the extent of such activities. To have sufficient and accurate data for the evaluation, we have developed a surveillance system that assesses tobacco advertising and promotions in the stores of licensed tobacco vendors. RTI will coordinate and implement this system with the assistance of the 28 Tobacco Control Community Partnerships.

We have developed the New York Retail Advertising of Tobacco Survey based on the successful Operation Storefront (CDHS, 1994) campaign, which was developed in the mid-1990s by the California Department of Health. The survey also shares common characteristics with other previously successful

tobacco promotion identification efforts, such as the nationwide ImpactTeen community observation survey (Wakefield, Terry, and Chaloupka, 2000), the Wisconsin Community Ad Watch (University of Wisconsin, 2002), and the Florida Point-of-Purchase Marketing Study (Ferguson, 1999).

We have defined "advertising" in the survey as branded preprinted, graphic or print, industry-produced signs or posters; digital, electronic, or mechanical three-dimensional items; product displays; and branded functional items, such as clocks, trash cans, and shopping baskets. The New York Attorney General's office reviewed the survey draft, and we incorporated changes based on their recommendations.

The survey instrument is comprised of four forms to collect the following information on tobacco advertising, merchandising, and promotion:

- Features of the store environment, including proximity of the store to a school
- Observations about the store's interior and exterior placement of cigarette advertisements, such as posters, banners, stickers, decals, or neon signs; the survey will not measure handmade or handwritten ads or printed signs that do not mention a specific brand (such as "cigarettes sold here" or "best price \$27.00 per carton")
- Observations about functional promotional items that advertise a brand and that also serve a purpose, such as clocks, doormats, trash cans/ashtrays, enter/exit or open/closed signs, coin trays, calendars, shopping baskets, or counter mats
- Observations about the placement of the product
- Free gifts or promotional items given away with the purchase of the product, such as visors, lighters, T-shirts, or hot sauce
- Presence of other tobacco product (cigar and smokeless) advertising
- Special cigarette prices and promotions, such as rebates and coupons, buy-two-get-one-free, or cents-off; these do not include "value brands" or "savings brands"
- Regular and sale prices of king-sized cigarette packs and cartons

#### Master Settlement Agreement Violations

- Stores with exterior pro-tobacco signage that exceeds 14 square feet
- Tobacco brand name merchandise free giveaway

#### New York Youth Access Laws Violations

- Self-service displays—Stores with tobacco products in unlocked containers that are located in areas accessible to the public
- Presence of New York age of sale sign—Stores without a sign posted in a location easily seen by customers that contains the following text: *"Sale of cigarettes, cigars, chewing tobacco, powdered tobacco, other tobacco products, herbal cigarettes, rolling papers, or pipes to persons under 18 years of age is prohibited by law."*

**Sampling Methodology.** The data used for this study came from the NYTCP. The data account for the New York State Department of Taxation and Finance's 26,552 registered cigarette tax agents, wholesale, and retail dealers that had an active license as of January 2003. This database contained fields with information on the legal and trade name of the licensed facility, facility address, telephone number, mailing address, tax ID, county name, and county ID. Using the county information, RTI expanded this database to include for each vendor the NYTCP region and the NYTCP area. In addition, RTI used Internet directories and search engines to classify the 26,551 vendors within each of the following outlet channels: Convenience Store/No Gas, Convenience Store/Gas, Large Grocery/Supermarket, Drugstore, Small/Independent Grocery, Mass Merchandiser, Tobacco Retailer, and Others. The Other category included the following: Restaurants/Bars, Vending Machines, Clubs/Recreational Parks, Wholesalers, and Newsstands/Lobby-stands.

We used a stratified random sampling design to sample 8.5 percent of all licensed New York retailers. We selected the primary sampling unit, the type of outlet channel, with the probability proportional to the national percentage of cigarette sales for each of the seven types of channels. We then oversampled Large Grocery, Drugstores, and Mass Merchandisers so that we could collect data on at least 150

stores within each channel. We also oversampled Small Grocery stores, composed mainly of Mom and Pop stores, because we expected to find a high number of pro-tobacco advertising in these. Finally, we undersampled Tobacco Retailers, as we already expect these to have a certain level of pro-tobacco advertising, and Other Stores, such as restaurants, which may be minor channels for pro-tobacco advertising (*Exhibit 5-5*).

**Exhibit 5-5. Tobacco Retail Store Sampling by Channel**

Channel	Number of Stores	Percent of Stores	Sample Number (based on percent of stores)	Percent of Annual Sales by Channel	Sample Number (based on percent of sales)	Recommended Sample Size
Grocery—small	10,007	37.7%	848	6.2%	140	500
Grocery—large	1,240	4.7%	105	6.2%	140	150
Convenience store/ gas	2,608	9.8%	221	31.1%	700	500
Convenience store	1,277	4.8%	108	31.1%	700	500
Tobacco retailers	344	1.3%	29	13.0%	293	250
Drugstore	2,051	7.7%	174	2.5%	56	150
Mass merchandiser	219	0.8%	19	2.3%	52	150
Other stores	8,804	33.2%	746	7.9%	178	50
<b>Total</b>	<b>26,550</b>	<b>100.0%</b>	<b>2,250</b>	<b>100.3%</b>	<b>2,257</b>	<b>2,250</b>

RTI drew a random sample of 5,532 stores, composed of a primary sample of 2,250 stores and an additional 3,282 replacement stores. We anticipate that a number of stores in our primary sample will not be available at the time of data collection. For example, some stores may have gone out of business or no longer hold a license to sell tobacco products. Thus, we provide the data collectors with an additional list of replacement stores that will match the original sample with respect to type of retail channel and geographic area.

**Training.** RTI has developed a training manual and training presentation to instruct regional and area managers, and Partner representatives, in conducting this survey. Proper training is essential, and RTI anticipates conducting a half-day training session about the data collection activities, objectives,

and methods at a September 2004 conference sponsored by NYTCP. RTI will provide copies of the training manual, role-play the interactions between the data collector and the store clerks, and conduct practice sessions for completing the survey forms.

The training manual is a comprehensive guide that provides descriptions and examples of the types of advertising that will be counted, defines the terminology used in this survey, provides instructions on which advertising will be counted and the procedures for completing the survey forms, and includes photographs of advertising to demonstrate correct counting methodology and definitions.

**Data Collection.** The NYTCP goal is to perform 2,250 surveys annually. An independent research firm will conduct the baseline data collection, surveying 2,250 New York tobacco retailers between September and October 2004. The Community Partners will then survey the other half of the sample, 2,250 stores, throughout a 12-month period starting in January 2005.

**Validation.** As a validation measure, an independent research firm will also collect data concurrent with the Community Partner data collection, on a predetermined sample of 20 percent of the same stores that the Partners are surveying. Upon completion of each monthly collection of validated data, the research firm will send RTI the survey instruments for data entry and analysis.

**Technical Assistance.** RTI will provide training materials and survey instruments to all regional managers to distribute to their Partners. RTI will also provide ongoing technical assistance and will enter data provided by the Partners.

**Findings.** RTI will monitor and assess changes in point-of-purchase tobacco advertising in retailers statewide and prepare a Quarter 1 report based on an analysis of the baseline data collected in August and September 2004. The report will include an executive summary of significant findings, tables with community and retailer characteristics, frequencies as to the type of point-of-purchase advertising and promotions measured by store channel and by tobacco brands, and frequencies of stores with MSA and New York Youth Access Laws' violations. In addition, RTI will summarize findings in

three Quarterly Reports at the end of each 3-month period of data collection by the Partners and in an Annual Report at the end of the first 12 months of data collection.

#### **5.2.4 Evaluation Studies and Data Collection Activities in Support of Goal 3: Promote Cessation from Tobacco Use**

##### ***Health Care Provider and Provider Organization Surveys***

Consistent with the program's objectives under its goal to promote cessation, it is necessary to have information about health care providers' knowledge, attitudes, intentions, and practices as they relate to addressing tobacco and health care provider organizations' systems and policies for promoting cessation. To gather these data, RTI is designing and implementing health care provider and health care provider organization surveys to provide evaluation information about the NYTCP's Cessation Center initiative. As part of this initiative, 19 Cessation Centers around the state are funded to promote among Health care provider organizations the implementation of tobacco use screening and assessment systems (TUSAS). The goal of these systems is to increase the number of health care providers that follow guideline recommendations for tobacco cessation by providing organizational-level support and prompting health care providers to deliver guideline-concordant care for smoking cessation (i.e., using the clinical practice guidelines 5 As [ask, advise, assess, assist, arrange] when assisting patients in quitting). In addition, the Cessation Centers support health care provider efforts at systematic screening and counseling of tobacco users by providing training and cessation resources, including the Quitline's Fax to Quit program. Together, these activities should result in more smokers being asked about their smoking, receiving advice to quit smoking, providing assistance and follow-up with cessation attempts, and—ultimately—in more smokers both trying to quit and quitting successfully.

The surveys in this part of the evaluation focus on changes in behavior at the health care provider organization level (i.e., are more organizations implementing TUSAS?) and resulting changes at the health care provider level (i.e., are more providers delivering the 5 As?) that coincide with the Cessation Center initiative. In addition, data from the cross-sectional and

longitudinal ATS will provide more long-term outcome information about cessation attempts among smokers and their exposure to health care provider behavior.

The primary objective of the health care provider organization survey is to ask health facility administrators to report on health care provider organization policies, recommended practices, training, and other standard procedures for treating tobacco dependence. The primary objective of the health care provider survey is to provide information about health care providers' knowledge, attitudes, intentions, and practices as they relate to addressing tobacco and to analyze these data for the evaluation of the NYTCP goal to promote cessation. Because there is currently no statewide system to gather this information, RTI is conducting a survey of a representative sample of health care providers in New York in Years 2 and 4 of the evaluation. Working with the NYTCP, we have explored methods to survey health care providers, including physicians, nurses, dentists, dental hygienists, nurse practitioners, physician assistants, and mental health and substance abuse counselors, and have worked collaboratively with various types of health care providers to develop an appropriate statewide contact list for this survey.

The health care provider and health care provider organization surveys will serve as a baseline against which we can evaluate the impact of the Cessation Centers' efforts to promote tobacco use screening and assessment systems in health care provider organizations. Further, we will also use these surveys to evaluate the ultimate impact on guideline concordant care for smoking cessation among health care providers.

### ***Continue and Enhance Quitline Caller Follow-up Surveys***

Current reports for the Quitline by Roswell Park contain several useful data points, including (a) number of callers choosing to speak with a Quitline counselor who provided stop-smoking counseling and information on local programs, (b) number leaving a voice mail message for a free stop-smoking packet to be mailed, (c) number choosing to listen to the taped message library, and (d) number leaving a message requesting that a counselor call them back. Data collected through the Quitline

include demographics (race/ethnicity, education, city or town of residence), source of referral, an indicator of whether the consumer made a previous Quitline call, smoking history, cigarette type (i.e., full-flavor, light, ultralight, and menthol/nonmenthol), previous quit methods, and insurance coverage.

In addition to these data, Roswell Park has conducted annual follow-up surveys of Quitline callers since 2000. Random samples of at least 500 subjects who have called for cessation services are reinterviewed 12 months after their initial call to the Quitline. Items assessed include process issues, such as receipt of the stop-smoking materials; methods used to quit; and smoking behavior. The main purpose of this survey is to determine how many of the smokers who contacted the Quitline within the past year have stopped smoking. The primary dependent variable is 7-day nonsmoking prevalence. This survey is also used to collect information on methods used to stop smoking and satisfaction with the service.

#### **5.2.5 Evaluation Studies and Data Collection Activities in Support of Goal 4: Prevent the Initiation of Tobacco Use Among Youth and Young Adults**

##### ***Youth Telephone Survey with Longitudinal Follow-ups***

The YTS provides a strong base for evaluating the impact of the NYTCP on long-term behavioral outcomes, such as current (at least once in past 30 days) and frequent (at least 20 out of the past 30 days) smoking. To complement the YTS, RTI is developing and implementing a longitudinal, telephone survey that provides information on youth's transitions from never smoking to experimenting to becoming regular smokers and the factors that influence these transitions. A longitudinal survey can help us understand how the NYTCP has influenced the trajectories of youth smoking and suggest new ways to curb smoking uptake. This section describes the sample design and approach for a 4-year longitudinal survey of youth. The current content of the survey includes questions related to the constructs presented in ***Exhibit 5-6***.



**Exhibit 5-6. Constructs Captured in Current YTS**


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▪ Schooling	▪ Situation-specific smoking
▪ Tobacco industry beliefs and perceptions	▪ Tobacco use prevention education in schools
▪ Work status	▪ Perceived reasons for smoking
▪ Perceptions of health risks	▪ Exposure to community antitobacco groups and programs
▪ Religiosity	▪ Nicotine dependence
▪ Perceptions of secondhand smoke exposure and risk	▪ Exposure to pro-tobacco influences
▪ Past cigarette use	▪ Cessation behavior
▪ Rebelliousness	▪ Exposure to tobacco advertising on the Internet
▪ Current cigarette use	▪ Cessation attempts
▪ Perceived social norms regarding smoking	▪ Purchase of cigarettes on the Internet
▪ Perceived smoking status	▪ Confidence in ability to quit
▪ Family smoking behavior and rules	▪ Exposure to tobacco images in video games
▪ Type of cigarettes smoked	▪ Barriers to quitting
▪ Media use	▪ Exposure to smoking images in movies
▪ Source of cigarettes	▪ Susceptibility/openness to smoking
▪ Specific campaign exposure	▪ Other substance use behavior
▪ Perceived access to cigarettes	▪ Social perceptions of smoking
▪ Exposure to school antitobacco groups and programs	

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**Sample.** We plan to begin the longitudinal telephone survey with a sample of youth ages 13 to 16 to capture youth at a time when transitions from never smoking to experimenting and experimenting to regular smoking are relatively common.

**Exhibit 5-7** shows the prevalence of smoking in various stages of smoking by age from the YTS. As of 2002, only about 1.5 percent of youth are smoking by age 13, but this number increases steadily with age. In addition to focusing on youth ages 13 to 16, we plan to oversample at-risk youth by applying screening rules designed to produce an analysis sample with data sufficiently spread out over four categories of progression to established smoking (i.e., nonsusceptible never smoker, susceptible never smoker, experimenter, and current smoker [in this case, smoked in the past 30 days and have smoked 100+ lifetime]). We propose to oversample households so that 50 percent of households have at least one adult smoker to maximize our chance of having a balanced distribution of youth along the continuum toward established smoking.

**Exhibit 5-7. Prevalence of Various Stages of Smoking by Age: New York YTS**

Age	Susceptible Never Smokers		Nonsusceptible Never Smoker		Experimenter (<100 cigarettes lifetime)		Nondaily Smoker (100+ cigarettes and currently smokes <20 days in last month)		Established Smoker (100 cigarettes and smoke 20+ days in last month)	
	2000	2002	2000	2002	2000	2002	2000	2002	2000	2002
≤11	11.34	14.59	74.09	73.76	12.25	8.98	0	0	2.32	2.27
12	17.71	13.94	61.15	68.43	20.13	16.87	0.50	0.04	0.50	0.17
13	16.71	15.77	47.48	50.82	33.15	31.72	1.10	0.35	1.31	1.29
14	13.31	13.79	35.96	44.17	42.90	36.38	1.82	1.34	4.68	3.27
15	11.06	10.38	33.89	40.16	41.52	40.77	5.49	2.84	7.32	4.93
16	7.91	8.09	29.10	32.08	44.18	43.82	3.57	2.79	13.35	10.47
17+	3.59	5.72	23.3	26.46	42.88	43.28	5.74	4.15	21.70	18.09

Based on the power calculations, the target baseline sample would consist of 2,000 13 to 16 year olds, with 1,000 youth from households with at least one adult smoker and 1,000 with no smokers. This would yield roughly 1,000 never smokers (susceptible and nonsusceptible) and 1,000 ever smokers (current smokers ≥100 cigarettes lifetime and experimenters < 100 cigarettes lifetime). Based on previous surveys, we expect to retain 85 percent of the sample after each wave.

**Exhibit 5-8** shows the sample sizes over time.

**Exhibit 5-8. Sample Size by Wave**

Wave	Baseline	Follow-up 1	Follow-up 2	Follow-up 3
Cohort Sample Size	2,000	1,700	1,445	1,228

Sampling households with youth ages 13 to 16 and oversampling households based on smoking status at such a high rate will entail costly screening if one follows the usual RDD methods to build our sample. We are currently exploring alternatives to RDD methods, such as having youth recruit their

friends into the sample and/or using commercial lists of households more likely to have youth in the target age group.

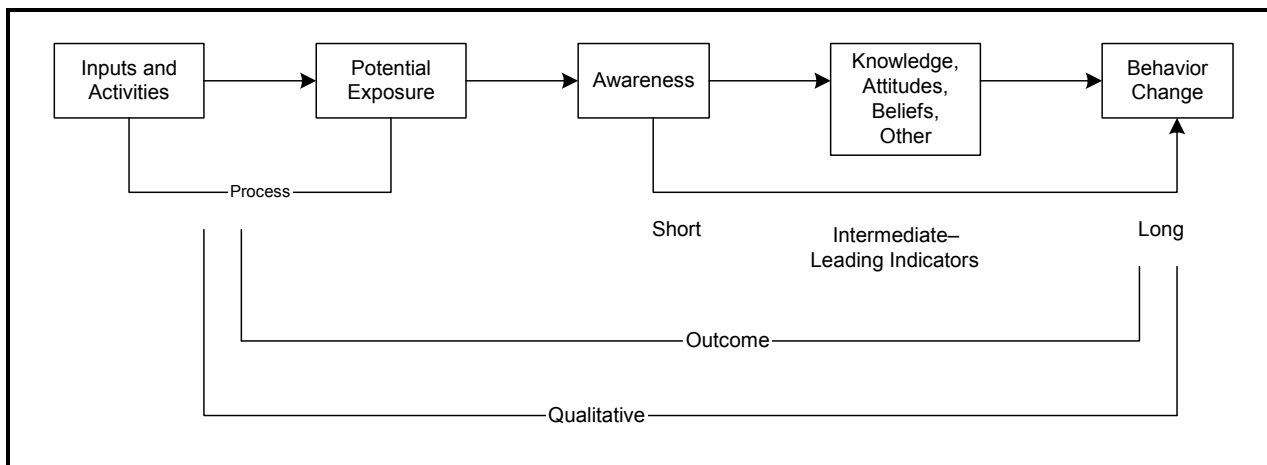
## 5.3 EVALUATING EFFECTIVENESS

### 5.3.1 Evaluating Program Effectiveness with Quantitative Data

The existing and proposed enhancements to the surveillance and monitoring systems will enable us to evaluate the program’s progress toward stated goals and objectives.

**Exhibit 5-9** presents a simple framework for the logic of the evaluation. This graphic shows the various steps in the process from program implementation to behavior change. It begins with understanding how program resources are translated into activities that have the potential to reach their intended audience. The next step is measuring to what extent the target audiences are aware of and receptive to program activities. We are then interested in how exposure to program interventions changes knowledge, attitudes, beliefs, intentions, and behavior within each of the program’s stated major goals.

**Exhibit 5-9. Evaluation Framework**



RTI and the NYTCP’s efforts to enhance the surveillance and evaluation data should produce sufficient data to monitor the progress of the program along this continuum. The following sections describe a complementary set of strategies that we will use to assess program impact using multiple data sets and techniques that will allow us to triangulate our findings.

### ***Process Evaluation***

Quantitatively, we will conduct process evaluations by analyzing the available data to assess the extent to which the program is meeting its objectives by implementing appropriate, planned, and coordinated activities and strategies targeted to specified populations. Using data from the NYTCP and monthly progress reports from Community Partners, we can examine the level and frequency of (1) training, technical assistance, and support provided by the NYTCP to the Community Partners; and (2) interventions and actions delivered by the Community Partners to the community or community groups (e.g., health care providers). Other NYTCP information that can help inform a process evaluation of the program relates to program expenditure records that can illustrate gaps between planned and actual expenditures and identify needed services that are not being obtained.

Another critical assessment includes measuring the quantity and reach of interventions/strategies. Using progress reporting data on the number of activities (e.g., letters to the editor written, press conferences held, community retailers educated about point-of-purchase advertising, school boards that adopted a policy) and other data sources (e.g., media buys, Quitline call volume, news media coverage, Medicaid utilization data), we can define and develop measures of populations served by or exposed to NYTCP interventions. Precisely measuring implementation of and exposure to program activities are fundamental tasks in evaluating the program's success. These process data are one potential source of information. We will have to rely on information from other data systems to fully quantify exposure to program activities. In particular, the ATS and the longitudinal survey of youth will provide some estimates of programmatic reach.

For both types of information, we recommend performing descriptive analyses that examine the patterns of these efforts with respect to geographic variation (such as county, media market, or program region) and variations over time. Depending on the target population for these activities, it may also be informative to examine variation by community and

individual characteristics, such as population density, race/ethnicity, age, and income level.

The intent of these analyses is to provide feedback to the program with respect to expected downstream impacts and any potential gaps in exposure to interventions and activities. Planned or unintentional variation in the reach and intensity of program efforts is important to understand as we assess downstream indicators of program impact. Specific analyses for program goals are detailed below where we describe and address short-term evaluation questions.

### ***Impact/Outcome Evaluation***

Building on our understanding of the process data, our next step is to describe analyses that illustrate the potential impact of the NYTCP on downstream behavioral determinants (e.g., awareness, attitudes, and intentions) and behavioral outcomes (e.g., initiation and cessation). A number of analytic descriptive and multivariate strategies are available to assess program impact on intermediate and long-term outcomes.

#### ***Descriptive Techniques:***

- Analyze trends in intermediate and long-term outcomes over time (e.g., quarterly data from the ATS) and contrast with any relevant and available comparison data from other states.
- Examine trends in self-reported exposure to program activities (e.g., awareness of antitobacco advertisements).
- Examine trends in self-reported outcomes by level of self-reported program exposure (e.g., exposed/not exposed or dose of exposure).
- Examine trends in self-reported program exposure and outcomes by level of program exposure based on external measures.
  - Media market measures of the dose of antitobacco advertisements
  - Number/intensity of Community Partner activities
  - Regional per capita volume of Quitline calls
  - Regional variation in news media coverage of tobacco issues

- Interrupted time-series analysis of changes in program outcomes as policies are changed or new interventions are implemented. For example, pre-post analyses of
  - the effects of the July 24 implementation of the comprehensive CIAA on secondhand exposure,
  - tax-paid sales data in New York State and City after implementation of the excise tax increases, and
  - self-reported cessation behavior once regional Cessation Centers are established and promoted.
- Contrast changes in self-reported outcomes over time from longitudinal surveys as a function of self-reported or external measures of program exposure (e.g., are smokers exposed to a larger dose of Community Partner activities at baseline more likely to attempt to quit in follow-up surveys compared with those exposed to a smaller dose?).

*Multivariate Methods:*

- Relate self-reported exposure to program activities to self-reported program outcomes in cross-sectional surveys at a point in time and with time-series data, controlling for confounding factors.
- Assess the correlation between self-reported exposure to program activities to self-reported program outcomes in longitudinal surveys, controlling for confounding factors such as baseline susceptibility to tobacco use or intentions to quit.

The first two descriptive analyses help us understand the basic trends in these important measures. To attribute changes in program outcomes to the program, it is necessary to first document changes in the expected direction for both these measures. The other descriptive and multivariate models attempt to correlate exposure to the program to program outcomes. The heart of these quantitative strategies focuses on the notion that individuals will differ in their exposure to various program activities (e.g., media campaign, Community Partners). By relating these exposures to outcomes, we will better understand how program initiatives work independently and jointly to contribute to the attainment of program goals. For example, adults who work in a smoke-free environment, live in a community with active Community Partners and readily available support for cessation, and are frequently exposed to antitobacco media messages will be less likely to smoke than

comparable adults who receive a smaller “dose” of these interventions. This strategy points to the critical importance of having good measures of exposure and awareness of program activities. A similar approach has been used in California (Rohrbach et al., 2002).

By making use of the mix of program activities across schools, workplaces, communities, and media markets, we can better measure the impact of each program component on key outcomes to determine program successes and failures. In assessing program effectiveness, our evaluation must also attend to the possibility that the context in which these program activities occur will influence program outcomes. Sociodemographic characteristics and the communities’ capacity to organize and deliver tobacco control interventions may influence program effectiveness.

We attempt to draw conclusions about program impact in four ways:

- trend analysis
- multivariate analyses
- multilevel method
- longitudinal analysis

We attempt to draw conclusions about program impact in four ways: (1) trend analysis, including pre-post analyses; (2) multivariate analyses that relate self-reported outcomes to self-reported exposures; (3) a more complex multilevel method that capitalizes on variation in program activities between geographic areas, such as counties, media markets, and/or region; and (4) longitudinal analysis.

### ***Trend Analysis***

First, to evaluate the effectiveness of the overall program, aggregate time-series models (trend analysis) can be used to observe if NYTCP implementation has had an effect on the observed trend in a particular aggregate outcome (e.g., smoking rates, tax-paid sales). This type of analysis could be used to examine outcomes specific to a particular program goal (e.g., smoking cessation) and separate program activities individually (e.g., Community Partner efforts, media campaign). However, with such a model, it is difficult to attribute an observed change in trend to any particular program activity.

This is essentially a type of pre-post model that examines the trend in a specific outcome before and after implementation of the NYTCP. This method implicitly controls for state-level unobserved factors that are time invariant. However, because other unobserved factors, other than implementation of the

NYTCP, could have an impact on outcomes, this method provides only weak statements about the program's effectiveness. The strength of causal claims of the NYTCP's effectiveness can be enhanced for these types of models (aggregate time-series) by comparing the trend in New York to similar states that have little or no tobacco control program activities.

### ***Multivariate Analysis—Cross-Sectional Data***

Second, when sufficient data exist for measuring program exposure and/or awareness as well as for important outcomes and controls, then more advanced multivariate time-series models can be specified that attempt to attribute observed trends in outcomes to trends in program activities controlling for possible confounders. This type of model requires repeated cross-sectional surveys (the same variables measured consistently over time). If the same aggregate unit is measured over time (e.g., community, county, school, or school district), then unobserved time-invariant factors associated with that aggregate unit can be controlled for in the analyses. This model allows for stronger causal statements about the effectiveness of the NYTCP.

A single cross-section of data can be used for a correlational analysis. This type of model is best for exploring associations between variables but does not allow causal statements about program effectiveness (except in cases when a strong theory is guiding the analysis, and even then a cautious interpretation of any causal claims is warranted). Multilevel models and/or structural equation models can be specified and estimated using cross-sectional data.

Much of the data available for evaluating the NYTCP come from several repeated cross-sectional surveys. Thus, any of the models discussed above can be employed to examine the effectiveness of the NYTCP. However, all of the above models have deficiencies in making causal claims about program effectiveness, especially when the outcomes of interest are at the individual level. To make the strongest causal claims about the impact of the NYTCP on individual outcomes (given a nonexperimental design), longitudinal data on individuals are required (see below).



Quantitative methods, while providing evidence of the program's effectiveness, have limitations in explaining the observed effectiveness. Results of the quantitative methods do not always provide answers that are useful to those implementing and operating the NYTCP activities. To add a richer level of detail and suggest possible explanations for the observed quantitative results, we suggest complementary qualitative methods. The aim of these efforts is to better understand the context within which change may be occurring and the "how" and "why" of program implementation.

### ***Multilevel Methods—Cross-Sectional Data***

Multilevel models (hierarchical linear models) are a multivariate tool to relate individual outcome measures to exposure to program activities that occur in schools, organizations, communities, and society at large. These models can also account for the context in which the program activities occur. Individual outcomes of interest include

- secondhand smoke exposure (Goal 1),
- attitudes about tobacco (Goal 2),
- cessation (Goal 3), and
- initiation (Goal 4).

Individuals also report their self-awareness of program activities. This could be seen as a measure of exposure; however, it is also a measure of how successfully the program activities reached the participants. In addition to examining the impact of contextual-level (community, school, media market) exposure to the program on individual outcomes, multilevel models also address the important question of what contextual-level variables (including exposure) affect the relationship between individual-level awareness and individual outcomes (these effects are known as cross-level interactions).

To fully utilize multilevel models, we require self-reports of exposure to program activities (self-reported awareness). Thus, we must consider the extent to which these measures are captured in statewide surveys. It is also necessary to gather quantitative data on program activities and tobacco control policies from schools, communities, and media markets to understand the context within which individuals make decisions

about their tobacco use. This highlights the importance of Community Partner data reporting and media exposure data.

One concern about this approach is the extent to which precise or representative estimates are available from statewide surveys (and other data reporting systems) at the level of counties (or some other meaningful contextual level).

Multilevel models offer an advantage here as well. These models use the full ensemble of data to make estimates. For example, a community-level estimate would be a weighted composite of information from that community and the full sample (these estimators are known as “shrinkage estimators”). Of course, this procedure does not involve a “free lunch,” and the relative weights given each component depend on the precision of the community estimate (Bryke and Raudenbush, 1992). Nonetheless, this estimation procedure is better than the alternatives. At a recent National Tobacco Monitoring Research and Evaluation workshop (November 2002), multilevel models were highlighted as a “cutting-edge” tool for evaluating comprehensive tobacco control programs.

### ***Longitudinal Analysis***

Longitudinal data collected for youth and adults provide an opportunity to draw stronger causal conclusions about the effectiveness of the various NYTCP activities than is possible with cross-sectional surveys. Using longitudinal data, we can track changes within individuals over time and relate these changes to exposure to program activities and other important influences.

One limitation of cross-sectional analysis is the inability to rule out that those who are more/less likely to recall being exposed to program activities may be more/less likely to smoke or more likely to quit. This phenomenon is known as selective attention—smokers may be just as likely as nonsmokers to be exposed to antismoking commercials, tobacco prevention lessons in school, and other program activities but may be less likely to recall them if they are not open to the messages. This selective attention may result in a negative (positive) association between self-reported exposures and tobacco use (intentions to quit). As a result, even if the program does lead to reductions in tobacco use, this phenomenon can lead to an

under- or overstatement of the size of the program effects. Thus, selective attention can be a real threat to conclusions about effectiveness.

With longitudinal data, we can account for selective attention to some extent by segmenting youth and adults by their baseline smoking status (e.g., closed or open to smoking, current smoking) or stage of change in smoking cessation (e.g., precontemplative, contemplative) and see how self-reported exposure to program activities is associated with *change* in tobacco-related beliefs and attitudes, smoking behavior, secondhand smoke exposure, and other key outcomes in follow-up surveys. We also account for other baseline characteristics, such as risk taking and confidence in quitting, that have a powerful influence on program outcomes.

Specifically, we examine how exposure to program activities can prevent those who are closed or open to smoking at baseline from escalating to greater tobacco use. Also, for those who are already smoking, we examine the influence of the program on increasing intention to quit or quit attempts. We also recommend exploring the impact of program activities on reducing exposure to secondhand smoke and engendering more assertive responses to secondhand smoke. To test this relationship, we employ various measures of secondhand smoke exposure, including the presence of a smoker in the household, home smoking rules, responses to secondhand smoke, and frequency of home and car secondhand smoke exposure.

Finally, it may be necessary to perform additional analyses to address critics who question whether the declines in tobacco use are attributable to the NYTCP or to increases in cigarette prices as a result of the recent tax increases or other factors. These analyses might include data from other “control” states (without a comprehensive tobacco control program) to better isolate the contribution of the NYTCP to changes in outcomes.

As previously noted, a number of limitations are inherent in quantitative analyses. From a measurement standpoint, they rely on recall of exposure to programs and self-reported behavior and are subject to other measurement errors. They have the advantage of producing population estimates of

behavior, but they do not provide very rich detail of the subtleties of youth or adult behavior and attitudes. Hence, we discuss various options for qualitative approaches that can complement our quantitative analyses.

### **5.3.2 Evaluating Program Effectiveness with Qualitative Data**

In conducting qualitative analysis, the research questions that were used to develop the study protocols (i.e., each interview or data collection guide) provide the framework for a content analysis of the data. Each question or concept contained in a specific study is assigned a code, and a content analysis consisting of identifying, coding, and categorizing the primary patterns in the data (responses to questions or other materials) is conducted. We can incorporate data from each source (e.g., monthly conference calls, interviews) into a master file to be analyzed for each study. In this way, we will conduct a cross-case analysis that groups together answers from different people to common questions or analyzes different perspectives on central issues or themes. For example, this approach was used to analyze responses to the stakeholder interviews described in Section 4.2. Using state-of-the-art software, such as N\*Vivo, we will analyze the data for themes and commonalities across particular communities, participants, or sources of information. Using principles and guidelines for qualitative data analysis (Miles and Huberman, 1994; Patton, 2002), we will analyze information from the sentinel site study described in Section 5.2 and provide findings both within each site and across all of the sentinel sites in order to fully understand the context within which tobacco control actions occur and provide recommendations on how best to implement community-based efforts in contexts similar to those in the sentinel sites. Qualitative data provide context for and more fully flesh out the quantitative findings. They also identify and describe additional issues that require study.

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## **5.4 DISSEMINATION**

Following the CDC's Evaluation Framework, the sixth and final step involves justifying and disseminating evaluation findings. This process involves synthesizing and validating evaluation findings to assess patterns of results. As data are analyzed, we

will synthesize findings into a summary of results that combines quantitative and qualitative evaluation studies. This preliminary summary will be discussed with the NYTCP so that our team can understand their perspective in interpreting results. We will then make judgments about program effectiveness, cost-effectiveness, and recommendations for program improvement based on these findings. These judgments and recommendations will be grounded in scientific principles as well as standards specified by the NYTCP.

RTI understands that disseminating evaluation findings means much more than creating reports. It means *translating* findings into meaningful information that is presented in a manner and context that is relevant to the work and objectives of the NYTCP and stakeholders. To gather input from stakeholders on their views on evaluation and dissemination, we asked them the following questions:

- What do you think should be the key priorities for the evaluation of the NYTCP in the next 12 months?
- How do you think evaluation information can best be presented and used to improve NYTCP performance?

In response to the first question, the most commonly stated priority is to evaluate the effectiveness of the media campaign. Stakeholders wanted to understand how current efforts could be improved. The second most frequently stated priority was to focus on evaluating and disseminating information about the comprehensive CIAA.

With respect to the second question, there was almost universal agreement that the evaluation findings should be disseminated broadly to the public and stakeholders in a “transparent way.” A few indicated that findings should first be shared with stakeholders and then more broadly distributed. Finally, a few indicated that the findings should be communicated in such a way to speak to the “average guy on the street” and to the program and the public health community.

RTI is committed to providing an independent, understandable, comprehensive evaluation of the NYTCP that will be used to strengthen program activities to achieve program goals.

# 6

## Evaluation Findings

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### 6.1 OVERVIEW

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*This chapter presents three types of findings: (1) comparisons between New York State and the rest of the country before and after 2000 and through 2002 to examine the potential impact of the program on various program outcomes in the first 2 years of the program, (2) baseline results against which we can measure the program's progress in subsequent years, and (3) a comprehensive evaluation of the CIAA.*

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To fairly and comprehensively evaluate the New York Tobacco Control Program (NYTCP) from this point forward, RTI and the NYTCP have spent the first 1½ years of the evaluation contract building the evaluation infrastructure—building the necessary data systems to permit an examination of how tobacco control resources are transformed into interventions and how those interventions impact New Yorkers' awareness, attitudes, intentions, and ultimately behaviors related to tobacco. To complement systems that serve the evaluation more broadly, RTI and the NYTCP developed a wide range of studies that permit a very comprehensive evaluation of the impact of the statewide Clean Indoor Air Act (CIAA). In addition, surveillance and other systems have monitored tobacco use behaviors for almost 20 years and permit an examination of trends in smoking before and after the infusion of program funds in 2000.

With the new and existing surveillance and other systems, this chapter presents three types of findings: (1) comparisons between New York State and the rest of the country before and after 2000 and through 2002 to examine the potential impact of the program on various program outcomes in the first 2 years of the program, (2) baseline results against which we can measure the program's progress in subsequent years, and (3) a comprehensive evaluation of the CIAA. After presenting these findings, we combine them with reviews and findings from

previous chapters to draw conclusions and make recommendations about next steps for the program.

### **6.1.1 Comparisons with the Remaining United States**

It should be noted that we present comparisons between New York and the rest of the United States during the first 2 years of the program for the following reasons. We examine how trends in the program's outcomes compare to the average experience in the rest of the United States. This comparison allows us to test whether New York is performing better or worse than the average state. To make such comparisons requires data from all states. As a result, our comparisons are limited to the period through 2002 when such data are available. For analyses that focus on New York alone, we refer to the Adult Tobacco Survey (ATS) that covers the time period from June 2003 to June 2004.

During the first 2 years of the program (2000–2002), we do not expect trends in program outcomes to significantly differ from the remaining United States as a direct result of program efforts for the following reasons. Farrelly, Pechacek, and Chaloupka (2003) have shown that investments in tobacco control are effective in reducing cigarette consumption but that there is a lag between program expenditures and declining sales. This may be true both because tobacco use is an addictive behavior and changing behavior takes time and because building the necessary program infrastructure (e.g., talented, trained staff; strategic plans) to have an impact on program outcomes is also time-consuming. In addition, in light of the lengthy contracting process highlighted in Chapter 4, the process of building the NYTCP infrastructure may have been slowed in the early years of the program. While the program may not have had sufficient time and capacity to have impacted program outcomes in the first 2 years since program inception, other factors such as large cigarette excise tax increases may have accelerated downward trends in program outcomes compared with the rest of the United States—a hypothesis we explore below.

### **6.1.2 Baseline Findings**

As previously noted, several of the surveillance and evaluation systems were developed once RTI's evaluation began. As a result, findings from the ATS beginning in June 2003 provide a snapshot of data against which future progress can be measured across a wide range of measures—exposure to secondhand smoke; policies restricting smoking in homes and cars; attitudes toward tobacco use (a key indicator of success noted in the statute establishing the program); knowledge of the health risks of smoking and of various tobacco products; tobacco use and cessation behaviors; awareness of and exposure to program activities, such as media messages and community mobilization efforts; and pro-tobacco influences, such as point-of-purchase advertising and promotions.

Data presented in this report can be compared with similar measures a year from now to indicate where the program has made progress and where it has not. These baseline findings can also highlight areas of program focus, such as gaps in knowledge about the health risks of smoking that can be addressed by countermarketing and other efforts.

### **6.1.3 Evaluating the Clean Indoor Air Act**

Although some of the findings in this report serve as a baseline against which future progress can be measured, a number of studies have been put in place to evaluate the impact of the statewide CIAA. As a result, we can present a comprehensive set of findings that evaluate the CIAA's impact on a range of outcomes from exposure to secondhand smoke in hospitality venues to compliance with the law, public support for the law, and its impact on economic indicators.

### **6.1.4 Organization of the Chapter**

The remaining sections begin with a discussion of trends in cigarette sales and adult smoking in New York overall and in comparison to the remaining United States. Subsequent sections present evaluation findings organized by program goal. At the end of each major subsection, we present conclusions and next steps for the evaluation.



## **6.2 CROSS-CUTTING MEASURES OF PROGRAM PROGRESS—PREVALENCE OF SMOKING AND CIGARETTE CONSUMPTION**

### **6.2.1 Simple Trend Analysis of Per Capita Cigarette Sales—New York versus the Remaining United States**

#### ***Overview***

In this section, we discuss trends in cigarette sales and estimated consumption in New York compared with the remaining United States. We first present trends in sales using state-level aggregate sales data. We then employ multiple regression techniques to control for cross-border sales so that the sales data are more reflective of cigarette consumption by New York residents. However, we are not able to capture other sources of tax avoidance such as Internet or American Indian reservation sales. In this model, we statistically test for differences in the trend in consumption between New York and the remaining United States after the inception of the NYTCP in 2000, controlling for the influence of cigarette excise taxes and other factors. Finally, we estimate the impact of recent changes in excise taxes on estimated cigarette consumption in New York.

#### ***Methods***

Analyses in this section of the report rely on cigarette sales, based on tax-paid sales. Aggregate sales data, such as the data used in this analysis, can over- or underestimate actual consumption as a result of tax evasion. Tax evasion is defined as all efforts to avoid cigarette excise taxes. This includes legal (e.g., crossing state boundaries to purchase limited amounts of cigarettes, purchasing tax-free cigarettes on American Indian reservations), illegal (e.g., smuggling large quantities of cigarettes from low tax states to high tax states), and questionably legal (i.e., Internet) means. Indeed, since New York increased its cigarette tax rate from \$0.56 per pack to \$1.11 in 2000, the tax differential between New York State and its neighbors implies some potential/incentive for New York residents to travel to a lower tax neighboring state or Indian lands within the state to purchase cigarettes.

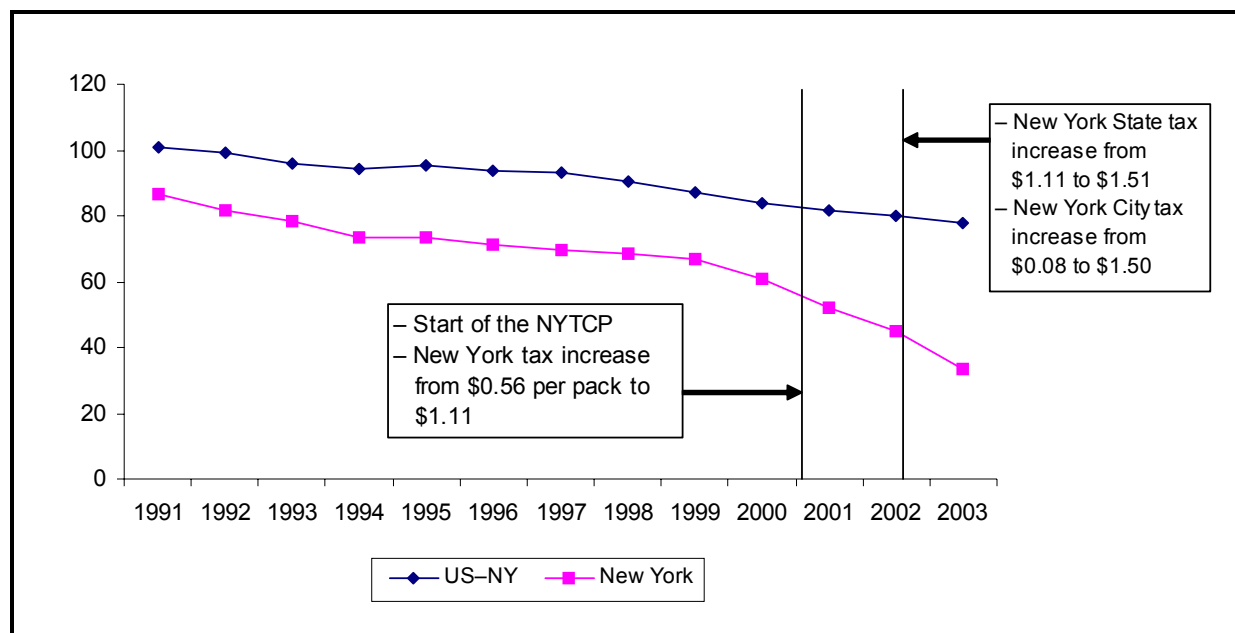
We first present unadjusted cigarette sales for New York and the remaining United States over time to examine recent trends in sales, with particular attention paid to the timing of recent tax increases and the launch of the NYTCP. Because of the potential for tax avoidance to confound the analysis of the trend in per capita consumption rates using aggregate state-level sales data, we apply regression techniques to get a more accurate estimate of the actual consumption levels in New York and other states and to test the hypothesis that the trend in consumption in New York is different from the trend in the remaining United States and states bordering New York. The regression controls for cross-border sales, cigarette excise taxes, sociodemographic factors, and secular trends in consumption (in New York, the rest of the United States, and New York after 2000) (Farrelly, Pechacek, and Chaloupka, 2003). It does not control for purchases via the Internet or from American Indian reservations.

Using the regression model, we estimate the impact of recent tax increases on sales. At this time, we do not model sales in New York City separately from New York State. Instead, we calculate a population-weighted excise tax based on New York City's and State's tax. Future analyses will model these jurisdictions separately. We also use the regression model to test for differences in trends in estimated consumption after 2000 and whether the program has accelerated declines in estimated consumption compared with the rest of the country. We estimate this model with and without controlling for excise taxes to illustrate (a) whether trends in estimated consumption have differed from the rest of the United States (controlling for other factors but taxes) and (b) the impact of recent New York State and City cigarette excise taxes on estimated consumption and revenue.

### **Results**

Overall, sales have declined for New York as well as the overall United States since 1986. Most notably, New York per capita sales are well below the national average, and the gap has widened considerably since 2000 (**Exhibit 6-1**). Per capita cigarette sales were 18 packs (19 percent) lower than average cigarette sales in the remaining United States in fiscal year

**Exhibit 6-1. Trends in Tax-Paid Cigarette Sales in New York and the Rest of the United States, 1993–2003**



1993 (78 packs in New York compared to 96 packs in the rest of the United States), but the gap has grown to 45 packs per capita (122 percent) in 2003 (78 versus 33 packs).

As previously noted, below average cigarette sales in New York are not necessarily evidence of below average cigarette consumption. The observed accelerated decline in cigarette sales following the tax increase from \$0.56 to \$1.11 in March 2000 can be explained by three factors. First, higher cigarette excise taxes will prompt some smokers to quit and other smokers to reduce their cigarette consumption. Second, New York cigarette excise taxes significantly exceeded the taxes in surrounding states between 2000 and 2002. Therefore, there was some incentive for New York residents to evade the higher New York taxes by purchasing cigarettes in lower tax neighboring states, via the Internet, or on American Indian reservations. Third, New York is likely losing sales due to illegally imported (smuggled) cigarettes from low tax tobacco-producing states, such as North Carolina, Virginia, and Kentucky, with cigarette excise taxes of less than 10 cents per pack of cigarettes.

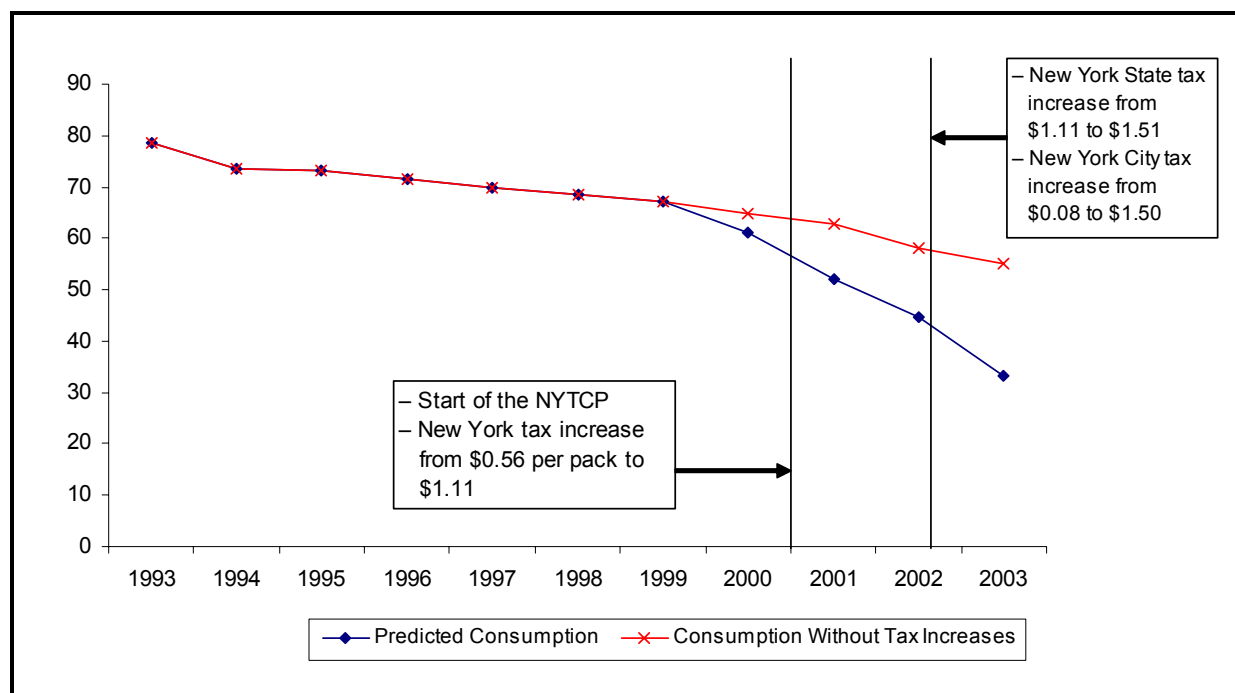
The incentive for New York smokers to purchase cigarettes in lower tax areas increased when New York City increased its cigarette excise tax from \$0.08 to \$1.50, for a total tax of \$3.00 per pack of cigarettes. Thus, for example, New York City smokers could have saved \$15 per carton in applicable taxes by purchasing their cigarettes outside of city limits. Recent increases in the cigarette excise tax rate in states bordering New York have significantly decreased the potential for cross-border sales and other forms of tax avoidance. Since 2003, all but two of the states with a common border with New York have tax rates as high or higher than New York State's tax. The two exceptions are Pennsylvania and Vermont. Pennsylvania's tax was \$0.31 from 1993 to January 2002, when it was increased to \$1.00. It then increased to \$1.35 in 2003. Vermont's tax was \$0.20 from 1993 to 1995, when it was increased to \$0.44. It later was increased to \$0.93 and then \$1.19 in January 2002 and 2003, respectively.

According to the 2003–2004 ATS, avoiding New York State and City taxes through cross-border, Internet, and American Indian reservation purchases is commonplace—in the past year, 58 percent of smokers on average reported buying at least once from sources that would not be reflected in tax-paid sales. This ranged from a high of 88 percent in the Buffalo area to a low of 42 percent in the Hudson Valley area. We find, on average, that purchasing in neighboring states (what we control for in our analyses) is as common as all other sources combined.

From the regression model, we predict consumption for New York and plot it and sales for the rest of the United States from 1993 through 2003 (**Exhibit 6-2**). This figure also shows a large drop compared with the rest of the United States after 2000. This model indicates that there is a statistically significant decline in estimated consumption after 2000 compared with the rest of the United States and that this change is due to the large increase in taxes and not to other factors (e.g., the NYTCP).

Using this model, we predict per capita consumption by New York residents as well as the consumption level in the absence of the tax increases starting in 2000. This figure illustrates that in the absence of the tax increases, per capita estimated

**Exhibit 6-2. Cigarette Consumption With and Without the Recent Increases in Cigarette Excise Taxes**



consumption would have been roughly 66 percent higher (55 versus 33 packs per capita). Because we were not able to control for tax avoidance due to the Internet, American Indian reservations, or duty-free shops, true consumption is likely to be somewhat higher than shown in this figure. Data from the ATS suggest that combined these other forms of tax avoidance are 27 percent more common than cross-border sales. Therefore, to further adjust our predictions, we calculated the magnitude of cross-border sales and added 1.27 times the cross-border sales quantity to capture the effect of tax avoidance. Doing so, predicted consumption in 2003 is 50, holding taxes at 1999 levels. This indicates that cigarette consumption would have been 52 percent (rather than 66 percent) higher had taxes remained at 1999 levels.

### **Discussion**

Our analysis indicates that declines in consumption may have accelerated after 2000 compared with the rest of the United States. Our results also suggest that these differences are attributable to increases in cigarette excise taxes. However,

without a precise estimate of the magnitude of tax avoidance through the Internet and American Indian reservations, we cannot definitively conclude that all of these declines represent declines in consumption. According to the ATS, purchasing in such locations is commonplace—on average 58 percent of smokers report buying from sources that would not be reflected in tax-paid sales. This ranged from a high of 88 percent in the Buffalo area to a low of 42 percent in the Hudson Valley area.

To the extent that there was a decline in consumption, some might argue that the program's efforts to educate the public about the importance of tobacco as a public health issue created an environment where such large cigarette excise taxes were acceptable to the public and political leaders. With the available data and evaluation methods, one cannot confidently rule in or out that NYTCP efforts were a significant factor in bringing about such policy changes; however, the fact that cigarette sales dropped faster in New York than in the remaining United States is a positive indicator of progress in light of one of the statutory markers of program effectiveness: "reduction in tobacco use among the general population" (Public Health Law §1399-jj).

Our models show that the recent New York State and City tax increases had a statistically significant impact on cigarette consumption, possibly reinforced by the fact that the increases in New York State spurred other states to raise their taxes to comparable levels. Given the magnitude of tax evasion, this topic deserves closer study to develop more precise estimates of the magnitude of tax evasion and possible solutions.

### **6.2.2 Trends in the Prevalence of Adult Smoking**

#### ***Overview***

This section complements the previous section and presents trends in self-reported smoking behavior among adults in New York and the remaining United States. These trends provide further insights into smoking behaviors in New York compared with the rest of the country prior to and following the launch of the NYTCP. We present information from both the Behavioral Risk Factor Surveillance System (BRFSS) and the Current Population Survey (CPS) for this analysis. Although the NYTCP

rightly relies on the BRFSS as the standard by which the prevalence of smoking is measured, we focus primarily on the CPS for two reasons. First, because the CPS uses an identical methodology across states, it facilitates comparisons between New York and the remaining United States. Second, the CPS not only contains information about the prevalence of current smoking but also includes measures of smoking cessation, exposure to secondhand smoke, and attitudes toward tobacco control policies.

Also note that starting in 1992 for the CPS, and 1996 for the BRFSS, adults were asked if they smoked “every day, some days, or not at all.” To see whether the prevalence of everyday and some day smoking is changing over time, we present these trends in smoking overall and for everyday and some day smokers separately. Because we can identify residents in New York City, we can examine the impact of the recent changes in cigarette excise taxes in New York State and City.

### ***Methods***

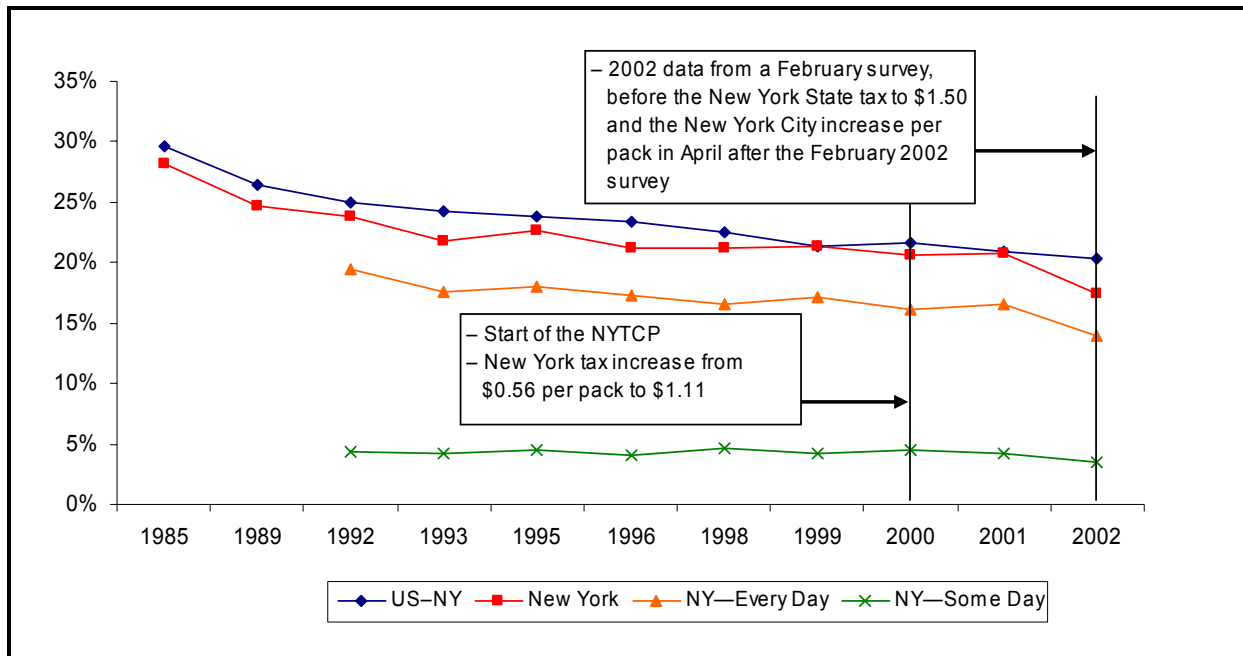
We first present trends in the prevalence of current smoking from 1985 through 2002 for residents of New York and the remaining United States from the CPS and the BRFSS. As noted in Chapter 5, the CPS provides national and state-level estimates of smoking and other tobacco-related behaviors. The BRFSS is designed to provide state-level estimates.

To test whether the difference in the overall prevalence of smoking is related to the recent cigarette excise taxes or may be attributable to the program, we estimate a regression model of the CPS data that controls for state- and city-level excise taxes, individual-level sociodemographic factors, an indicator of the time period 2000–2002 (the period after the program started), an indicator variable for New York, and an interaction between the previous two indicators. The latter variable tests whether smoking rates were lower in 2000–2002 in New York compared with the rest of the country. We estimate this model with and without taxes to test first whether smoking rates were lower in New York in this period and then whether this difference is fully accounted for by the changes in the tax.

## Results

**Exhibit 6-3** shows that smoking rates from the CPS were similar between New York and the rest of the country until 2002, when smoking rates were lower in New York (20.3 percent versus 17.4 percent). This figure also reports the prevalence of smoking on some days and every day and suggests that most of the decline in 2002 is from everyday smokers.

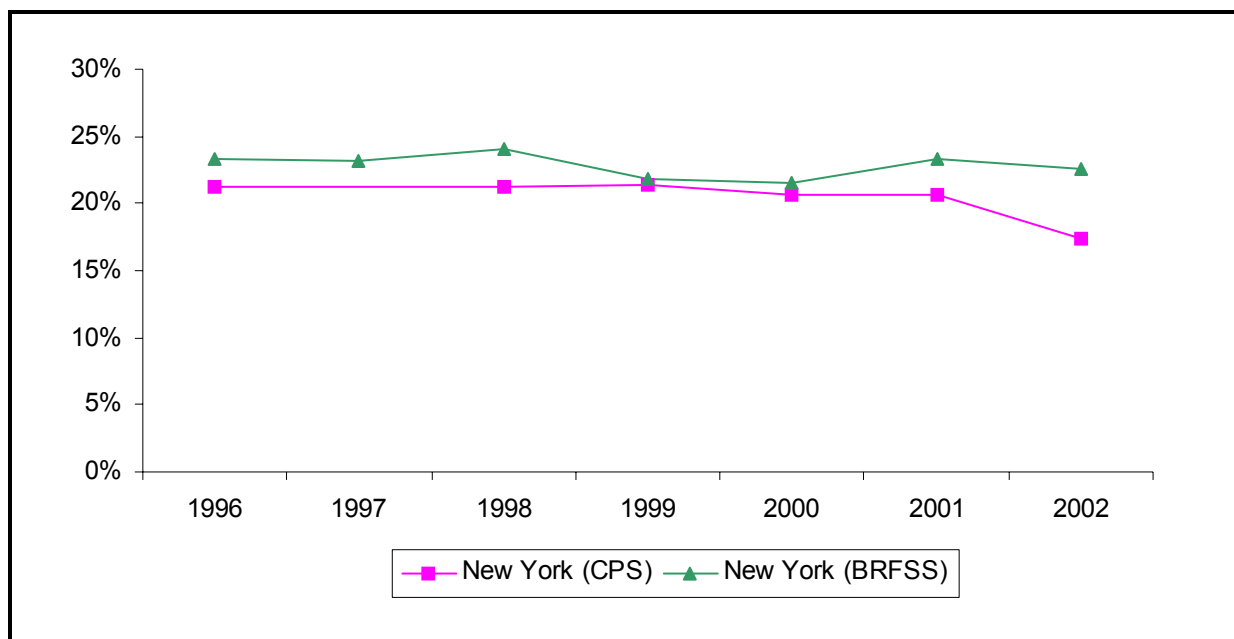
**Exhibit 6-3. Trends in the Prevalence of Adult Smoking in New York and the Rest of the United States, CPS 1985–2002**



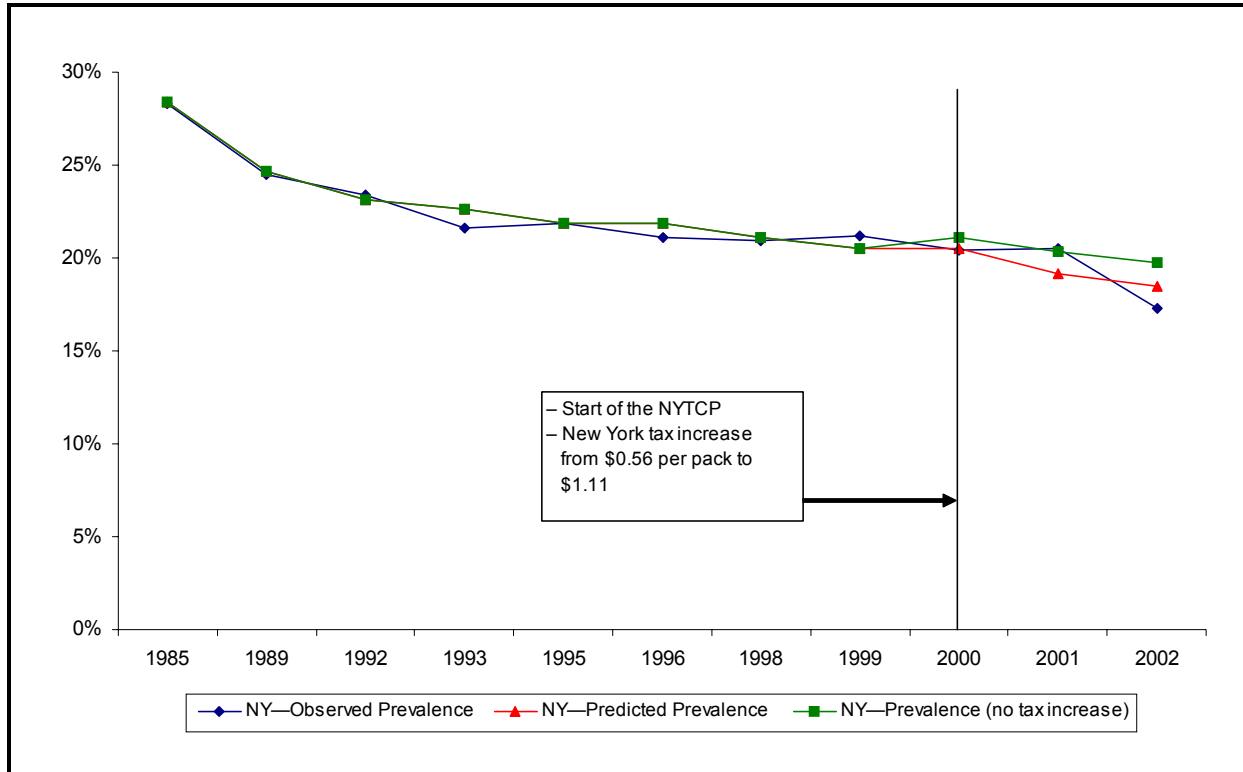
**Exhibit 6-4** presents data from the BRFSS and the CPS from 1996 through 2002. This graph indicates a fairly similar pattern of smoking over this time period but with a more pronounced drop in smoking in the CPS from 2001 to 2002.



**Exhibit 6-4. Trends in the Prevalence of Adult Smoking in New York from the BRFSS and the CPS, 1996–2002**



Similar to the regressions of cigarette sales, our models of the prevalence of smoking suggest that the lower prevalence observed after 2000 is related to higher cigarette excise taxes. In **Exhibit 6-5**, we present predicted prevalence if the cigarette excise tax remained at \$0.56. This figure indicates that the prevalence of smoking is 1.3 percentage points lower in 2002 than it would have been if the tax remained at \$0.56. That translates to 187,791 fewer smokers as a result of the tax increase to \$1.11.

**Exhibit 6-5. Prediction of the Prevalence of Adult Smoking in New York in the Absence of the 2000 Tax Increase, CPS 1985–2002**

### Discussion

Our analysis of smoking prevalence does not identify declines in smoking rates in New York after 2000 that are different from the rest of the United States. We did, however, find a statistically significant relationship between cigarette excise taxes and smoking prevalence. As noted above, some might argue that the program's efforts to educate the public about the importance of tobacco as a public health issue created an environment where such large cigarette excise taxes were acceptable to the public and political leaders.

Our models do show that the recent New York State tax increases had a statistically significant impact on cigarette prevalence, and we predict that there are 187,791 fewer smokers as a result. At this stage of the evaluation, the results are inconclusive with respect to the effectiveness of the program. The ATS, which began in 2003, will provide

evaluation information that more closely ties program efforts to program impact.

### ***Conclusions and Next Steps***

The findings presented above indicate that from 2000 to 2002, cigarette sales in New York declined faster than in the remaining United States but that prevalence did not. What is not clear is whether the decline in sales is reflective of a decline in cigarette consumption or merely an increase in tax avoidance. Sales data capture reduced consumption, quit attempts, cessation, and tax avoidance.

In both of our analyses, however, increases in cigarette excise taxes were associated with declines in tobacco use. In both cases, although it is reasonable to assume that the program contributed to an environment favorable to the increases in the cigarette excise tax, it is difficult to directly attribute tax-related changes to the program.

In the case of cigarette sales, it is important to note that the sales data may overstate the actual decline in cigarette consumption. Although we employed methods to account for some potential tax evasion, it is difficult to capture Internet sales and sales on American Indian reservations, which would lead to an overstatement of the decline in sales (since these sales are not reflected in tax-paid sales). As a result, some of the decline in sales in New York compared with the remaining United States may be attributable to tax evasion.

Finally, to put these findings in context, previous research would indicate that it requires more than 2 years for a program to have a large impact on tobacco use.

To have a clearer understanding of the impact of the program on tobacco use, we will update these analyses to incorporate more recent data. More recent data may provide more insights into program impact and at a minimum may be able to identify the impact of the comprehensive CIAA. In addition, future analyses will use monthly, rather than annual, sales figures to better isolate the impact of policies and program efforts on cigarette consumption. Finally, we will work to get a better

understanding of the volume of sales via the Internet and on American Indian reservations.

***Summary of Section 6.2 Findings***

- Taxed cigarette sales were lower in New York after 2000 compared with the remaining United States.
- These differences appear to be related to increases in cigarette excise taxes.
- Estimated cigarette consumption was 52 percent lower in 2003 than it would have been if New York State and New York City cigarette excise taxes remained at 1999 levels.
- According to the ATS, purchasing in such locations is commonplace—on average 58 percent of smokers report buying from sources that would not be reflected in tax-paid sales. This ranged from a high of 88 percent in the Buffalo area to a low of 42 percent in the Hudson Valley area.
- The prevalence of smoking in 2002 was 1.3 percentage points lower than it would have been had New York State not increased its tax to \$1.11 in 2000.
- As a result of the 2000 cigarette excise tax increase, there were 187,791 fewer smokers in New York.
- Future analyses of more recent data should provide more definitive statements about the impact of the program on tobacco use.

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### **6.3 GOAL 1: ELIMINATE EXPOSURE TO SECONDHAND SMOKE**

NYTCP efforts in this goal area have focused on reducing exposure to secondhand smoke in public and work places, as well as in private homes and cars. Strategies have included passing local ordinances banning smoking in indoor public and work places and in parks, beaches, and recreation areas; educating community members on the dangers of exposure to secondhand smoke; and motivating people to make their homes and cars smoke-free.

With the enactment of the comprehensive CIAA on July 24, 2003, there has been a wide array of evaluation activities to understand the impact of the law. In this section, we first present data on exposure to secondhand smoke among various

populations in New York: youth, adults, workers overall, and hospitality workers. We then present findings from several evaluation studies to answer the following evaluation questions:

1. Has exposure to secondhand smoke in the workplace and home declined over time?
2. How have restaurants, bars, and bowling facilities complied with the new law?
3. Are New Yorkers in support of the new law, and what are their attitudes toward exposure to secondhand smoke more broadly?
4. How has the news media covered secondhand smoke issues?
5. How has restaurant, bar, and bowling facility patronage changed in response to the law (based on self-reported behaviors)?
6. How common are restrictions on smoking in homes and cars?

These data come from a variety of data sources, including the CPS, the ATS, and the Youth Tobacco Survey (YTS); an observational study of compliance with the law in restaurants, bars, and bowling facilities; a study of restaurants, bars, and bowling facility workers' exposure to secondhand smoke before and after the law; a news media tracking study; economic indicators of the impact of the law; and hospital discharge data that permit an examination of the impact of the law on secondhand smoke-related health outcomes.

### **6.3.1 Exposure to Secondhand Smoke**

In this section, we summarize available data on New Yorkers' exposure to secondhand smoke from a variety of data sources. From the national CPS, we summarize trends in exposure to smoke in the home and in the workplace among indoor workers in New York and the remaining United States from 1992 through 2002. These data provide context prior to the implementation of the NYTCP and the recently passed comprehensive CIAA. These are the most recently available data from the CPS on both New York and the remaining United States. We then summarize more detailed and recent data on exposure to secondhand smoke from the New York ATS and YTS.

***Trends in Exposure in Homes and Workplaces in New York and the Remainder of the United States, 1992–2002***

**Overview.** To provide a picture of trends in exposure to secondhand smoke prior to implementation of the NYTCP and the comprehensive CIAA, we present summary statistics on exposure based on the CPS.

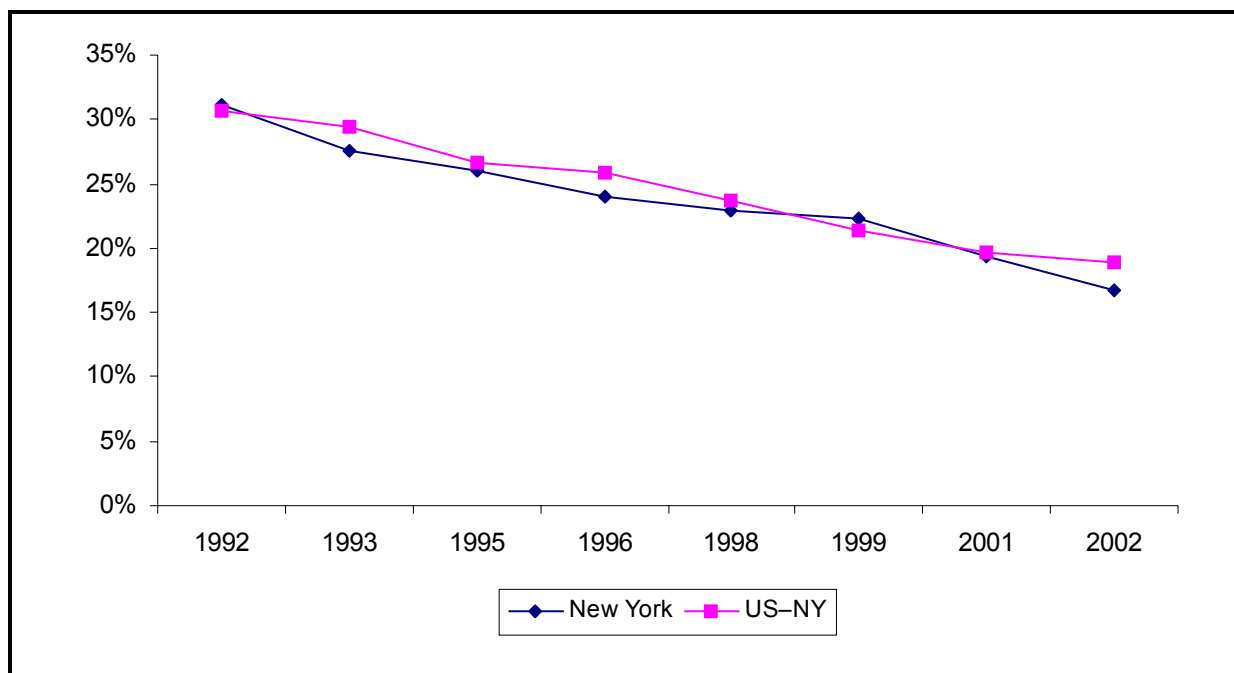
**Methods.** In this section, we estimate the prevalence of exposure based on summary statistics from the CPS, applying appropriate survey weights and adjusting for the complex survey design (Stata 8.0). To estimate exposure in the home, we code whether there is a smoker in the household and whether the household completely bans smoking in the home. For exposure in the workplace, workers are asked to answer the following question: “During the past two weeks, has anyone smoked in the area in which you work?”

**Results.** *Exhibit 6-6* shows that over the past decade, exposure to secondhand smoke in the home has steadily declined from 31 percent of households in New York and the remaining United States in 1992 to 17 percent and 19 percent for New York and the remaining United States, respectively, in 2002.

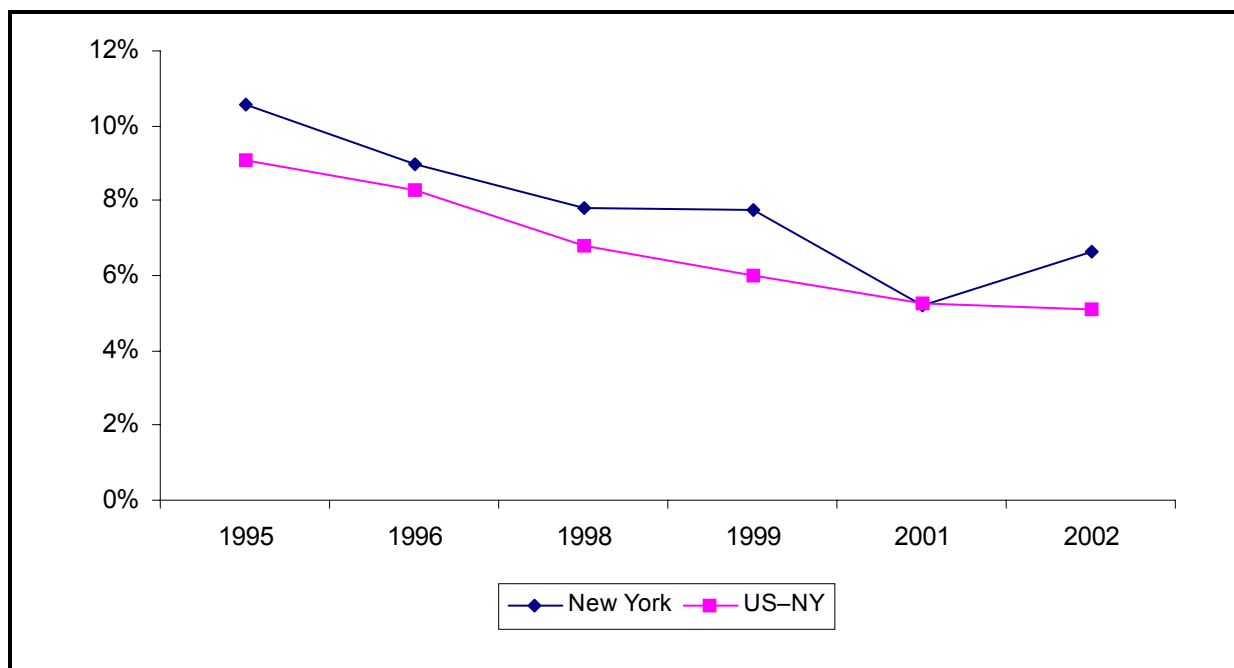
As with exposure in the home, reported exposure in the workplace has declined in the past decade. Exposure to secondhand smoke among indoor workers in New York has been slightly higher than in the remainder of the United States from 1992 through 2002, with an anomalous drop in 2001. In 2002, 5.1 percent of workers in the rest of the country reported exposure compared with 6.6 percent in New York (*Exhibit 6-7*).

**Discussion.** Through 2002, exposure to secondhand smoke in the home and the workplace steadily declined. In addition, rates of exposure were similar between New York and the remaining United States. In the following section, we examine more recent data prior to and following implementation of the CIAA.

**Exhibit 6-6. Trends in Exposure to Secondhand Smoke in the Home in New York and the Rest of the United States, 1992–2002**



**Exhibit 6-7. Trends in Exposure to Secondhand Smoke Among Indoor Workers in New York and the Rest of the United States, 1995–2002**



### ***Current Exposure to Secondhand Smoke from the ATS and YTS***

In this section, we present more recent data on exposure to secondhand smoke among the general population in “rooms” and “cars” and among workers in the workplace. We summarize this information for the entire population and for nonsmokers.

**Methods.** We estimate the prevalence of exposure based on summary statistics from the ATS and YTS, applying appropriate survey weights and adjusting for the complex survey design (Stata 8.0). Exposure among the general population is defined as any reported exposure in response to the following questions: “During the past 7 days, approximately how many hours (total in a week) did you spend in a room (either work or home) where someone has been smoking?,” and “During the past 7 days, approximately how many hours (total in a week) did you spend in a vehicle where someone has been smoking?” We report exposure for each of these settings separately and combined. In other words, exposure in cars indicates that adults are exposed to secondhand smoke in cars at a minimum and possibly also in rooms. The same is true for exposure in rooms. The combined exposure measure indicates whether New Yorkers are exposed to secondhand smoke in *either* cars or rooms.

### **Results—Exposure in Rooms and Cars. *Exhibit 6-8***

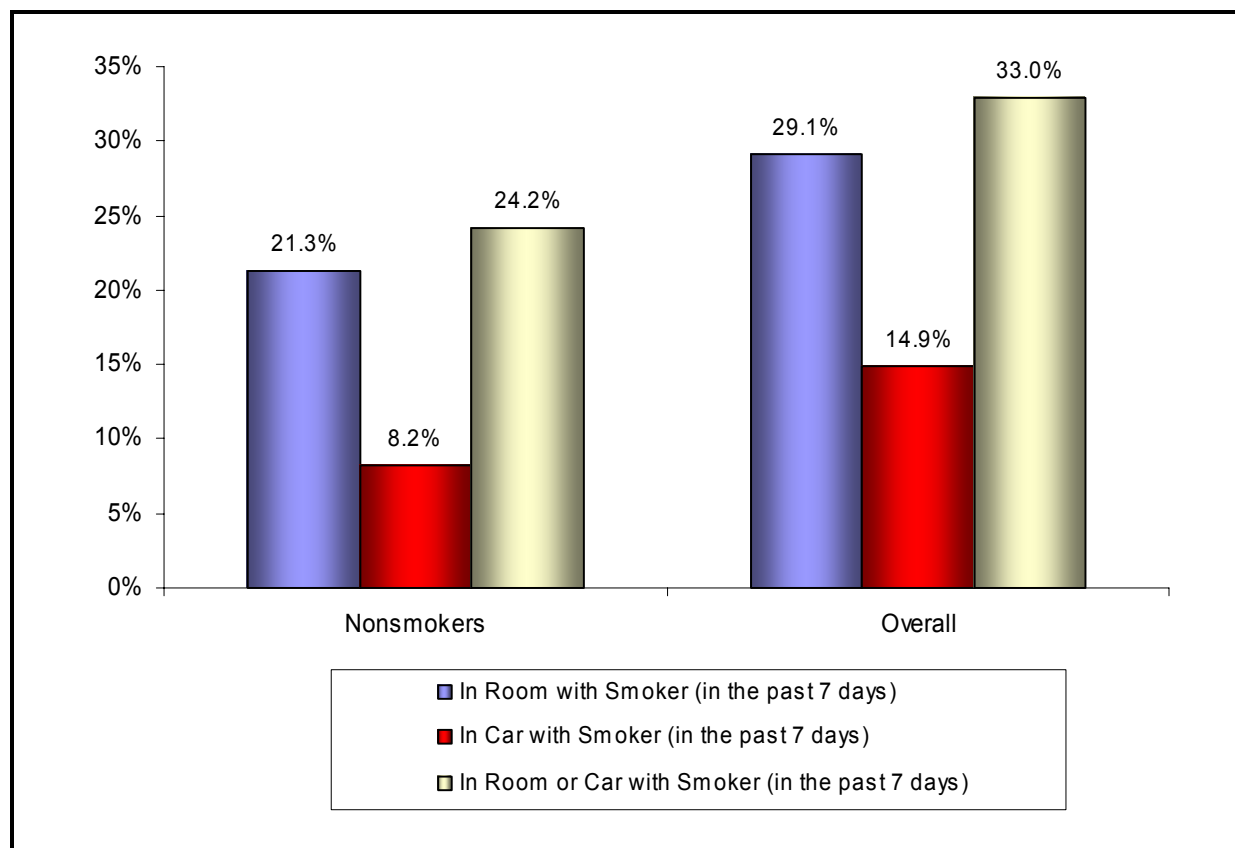
indicates that 33 percent of adults in New York were either in a room or in a car with a smoker in the past 7 days.

Approximately 29 percent of adults in New York were in a room with a smoker, and approximately 15 percent were in a car with a smoker. Because exposure to secondhand smoke is more of a concern to nonsmokers, we also present the corresponding figures for them. As would be expected, the rates are lower: 21.3 percent for rooms, 8.2 percent for cars, and 24.2 percent combined.

The YTS asks youth to report the number of days they were in a room where someone was smoking. As of 2002, 62.2 percent of youth reported being exposed to secondhand smoke at least 1 day in the past week—significantly higher than the



**Exhibit 6-8. Percentage of Adults Exposed to Secondhand Smoke in the Past 7 Days in Rooms, Cars, and Rooms and Cars Combined, ATS 2003–2004**



corresponding figure for adults. The comparable figure for nonsmoking youth was 57.5 percent.

**Workplace Settings.** The ATS asks current workers to report whether there was any smoking in any of the indoor work areas in the past 7 days. These data show that a small proportion of workers are exposed to secondhand smoke (10.3 percent), and the prevalence of exposure in workplaces is somewhat higher than suggested by the CPS data. Despite the implementation of the CIAA, this figure has remained stable across all four quarters of available data from the ATS

**Discussion.** Overall, trends in exposure to secondhand smoke among workers showed a steady decline through 2002. However, despite the passage of the comprehensive CIAA laws, recent data show that 10 percent of workers continue to report observing cigarette smoking in their workplace. It is important

to note that the data from the ATS represent a time period after the implementation of other local ordinances (e.g., New York City) that banned smoking in many workplaces and covered more than three-quarters of New Yorkers. Therefore, we would not necessarily expect that the data from the ATS would indicate large changes in exposure to secondhand smoke in the workplace.

Compared with adults, youth reported a surprisingly high level of exposure to secondhand smoke—more than twice the rate of adults. Although youth may interpret or respond to this question differently from adults, the difference is rather striking.

### **6.3.2 Compliance with the Clean Indoor Air Act**

One of the key questions for the evaluation of the comprehensive CIAA is to what extent hospitality venues across the state comply with the law and whether compliance changes over time. Hospitality venues, such as restaurants, bars, and bowling facilities, which are the focus of this study, were allowed to serve smoking patrons under certain conditions prior to this law. Below, we present findings from four complementary studies that

- observe compliance of restaurants, bars, and bowling facilities throughout New York State;
- present self-reported observations of smoking by ATS adults for these same locations and bingo halls;
- examine air quality in Western New York before and after the law; and
- estimate hospitality workers' exposure to secondhand smoke before and after the law.

With these studies, we can triangulate the findings across studies and present a comprehensive picture of compliance with the CIAA.

#### ***Observational Study of Restaurants, Bars, and Bowling Facilities***

**Overview.** An observational study was conducted initially by the Center for Tobacco Free New York and later by the NYSDOH to examine the level of compliance in the month prior to the law taking effect and 1, 3, 6, 9, and 12 months after the law

took effect. This summary is based on a report developed by the NYSDOH.

**Methods.** Summary statistics of indicators of compliance with the CIAA are presented from the observational study of more than 300 hospitality venues statewide (described in detail in Chapter 5). Baseline observations were conducted approximately 1 month prior to implementation of the law. Follow-up observations were conducted 1, 3, 6, 9, and 12 months following implementation of the law.

Compliance is reported and defined as 100 minus the proportion of venues in which smoking patrons were observed. Other indicators of interest include

- presence of ashtrays,
- visibility of cigarette smoke,
- presence of cigarette smoke odor,
- smoking-related signage, and
- presence of tobacco industry promotional items.

**Results.** At baseline, observations were conducted at 300 hospitality venues. These figures have diminished slightly at each assessment point with a total of 226 venues included in the 12-month assessment or 75 percent of the baseline sample (**Exhibit 6-9**). A nominal reimbursement was instituted for the 6-month assessment to cover observers' costs and to maintain motivation to conduct the remaining observations.

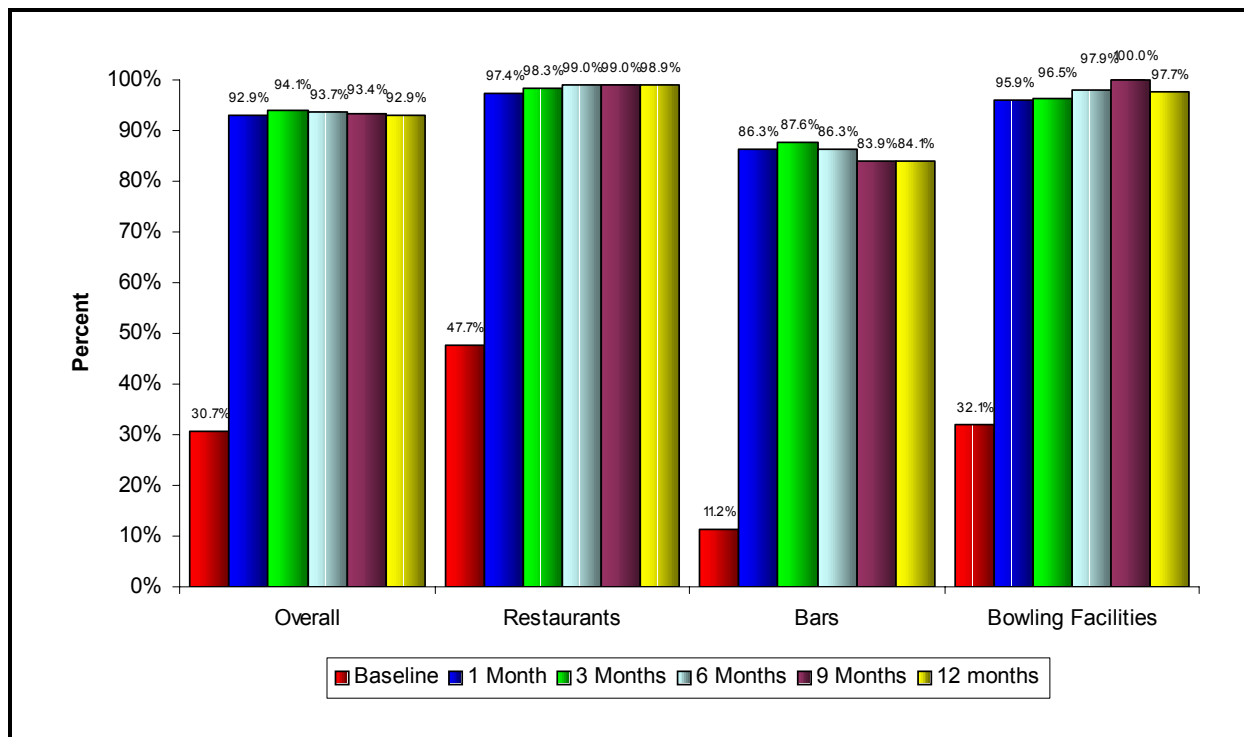
**Exhibit 6-9. Observational CIAA Compliance Study Sample Size by Venue and Assessment Point**

	Baseline	1 Month	3 Months	6 Months	9 Months	12 Months
Restaurants	128	115	118	97	99	94
Bars	116	102	94	93	91	88
Bowling Facilities	56	48	54	46	49	44
Overall	300	264	264	236	239	226

*Restaurants, bars, and bowling facilities quickly complied with New York State’s CIAA within 1 month of implementation. Twelve months after implementation, compliance is nearly complete.*

The nonsmoking rate was 30.7 percent for all venues prior to implementation of the law. Compliance 1 month after the law took effect was 92.8 percent, remaining stable at 92.9 percent at the 12-month assessment. Compliance in bars is lagging behind restaurants and bowling facilities (**Exhibit 6-10**). In **Exhibit 6-11**, we present other indicators of interest that are consistent with the observations of smoking—showing that bars lag behind other venues. These data indicate that signage has not decreased as rapidly as indicators of smoking.

**Exhibit 6-10. Percentage of Venues Complying with the Clean Indoor Air Act, Observational CIAA Compliance Study**



**Discussion.** Restaurants, bars, and bowling facilities quickly complied with New York State’s CIAA within 1 month of implementation. Twelve months after implementation, compliance is nearly complete. Compliance in bars, while dramatically improved, lags behind the other venues. Smoking is still occurring in about one of six bars across New York State. Special consideration should be given by programs to target

**Exhibit 6-11. Percentage of Venues with Indicators of Smoking or Tobacco Promotion, Observational CIAA Compliance Study**

	Baseline	1 Month	3 Months	6 Months	9 Months	12 Months
<b>Restaurants</b>						
Ashtrays	60.2	1.8	0.9	2.1	1.0	1.1
Visibility	48.4	0.9	1.7	1.0	3.0	1.1
Odor	53.9	3.5	2.6	2.1	6.1	1.1
Promotional Items	8.6	3.5	3.5	4.1	4.0	5.3
Signs	34.4	43.0	37.1	41.2	40.4	38.3
<b>Bars</b>						
Ashtrays	86.2	3.9	8.5	10.8	14.3	9.1
Visibility	75.9	11.8	12.8	12.9	17.6	14.8
Odor	82.8	27.5	25.5	24.7	26.4	25.0
Promotional Items	20.7	13.7	8.5	8.6	9.9	9.1
Signs	6.9	38.2	36.2	26.9	31.9	31.8
<b>Bowling Facilities</b>						
Ashtrays	69.6	2.1	7.4	2.2	0.0	2.3
Visibility	44.6	4.2	1.9	2.2	0.0	2.3
Odor	66.1	16.7	11.1	6.5	8.2	9.1
Promotional Items	7.1	6.3	7.4	10.9	8.2	9.1
Signs	41.1	54.2	51.9	58.7	61.2	47.7

compliance in bars through education and enforcement. One year after the CIAA took effect in New York, compliance with the law is strong and holding steady.

#### ***Self-Reported Observations of Smoking in Hospitality Settings from the ATS***

**Overview.** To complement the observational study of compliance, adults in the ATS were asked to report whether they observed smoking in restaurants, bars, bowling facilities, and bingo halls on their last visit to these locations. To assess how these observations changed as a result of the ban on smoking in hospitality settings, we present data from the ATS prior to and following July 24, 2003.

**Methods.** In this section, we estimate summary statistics based on the following questions from the ATS:

- "The last time you went to a restaurant in your community in the past 30 days, did you see someone smoking indoors?"

- “The last time you went to a bar in your community in the past 30 days, did you see someone smoking indoors?”
- “The last time you went to a bowling alley in your community in the past 30 days, did you see someone smoking indoors?”
- “The last time you went to a bingo hall in your community in the past 30 days, did you see people smoking?”

Those who went to a restaurant, bar, bowling alley, and/or bingo hall, respectively, were asked these questions. We estimate the prevalence of people who noted seeing people smoking before and after July 24, 2003, from the ATS. The first quarter of ATS data collection began in late June and ended at the end of September 2003. We report results for 1,024 respondents who completed surveys before July 24 and 7,128 respondents afterwards.

**Results.** *Exhibit 6-12* shows a marked decline in observations of smoking in all settings following implementation of the CIAA; however, smoking levels before implementation and rates of change in observed smoking following implementation varied considerably across settings. Before the law, 18.5 percent of adults reported seeing smoking in restaurants, and this percentage dropped nearly in half to 9.8 percent in the period from July 24 to September 30, 2003 (quarter 3 or Q3). In subsequent quarters of data, the rate declined to around 4 percent.

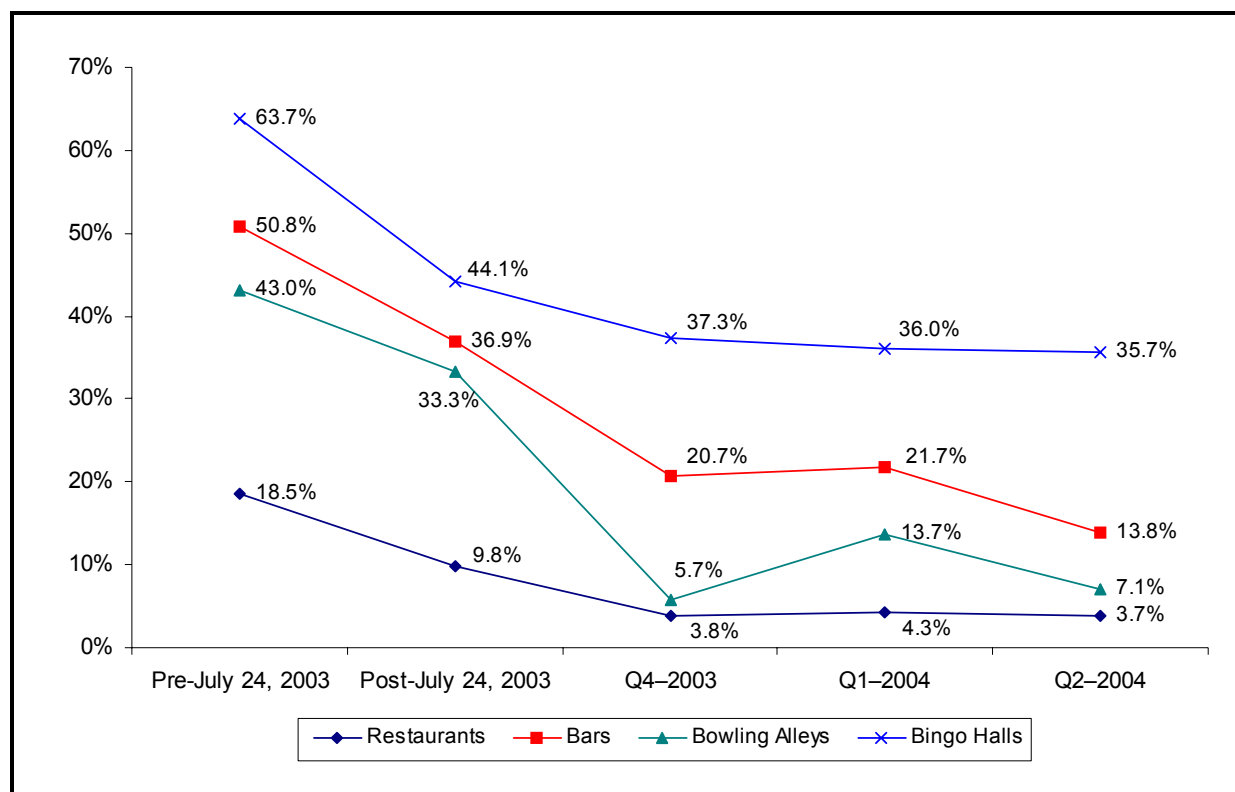
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*These results suggest that although smoking declined markedly in all hospitality settings, the CIAA did not eliminate all smoking.*

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In bars, the level of smoking was much higher at baseline at 50.8 percent before July 24, declining to 36.9 percent in the remainder of Q3–2003 and to 13.8 percent by Q2–2004. For bowling facilities, the prevalence of observed smoking decreased from 43.0 percent prior to the law to 33.3 percent afterwards but dropped to 7.1 percent by Q2–2004. Finally, in bingo halls, the rate declined from 63.7 percent prior to the law to 44.1 percent in the remainder for Q3–2003. In the following three quarters, smoking continued to be observed by more than one-third of patrons. From the period prior to implementation to Q2–2004, all of these changes are statistically significant, with the exception of bingo halls.

**Exhibit 6-12. Self-Reported Observations of Smoking in Restaurants, Bars, Bowling Alleys, and Bingo Halls, ATS 2003–2004**



**Discussion.** These results suggest that although smoking declined markedly in all hospitality settings, the CIAA did not eliminate all smoking. In fact, in bingo halls and bars, smoking continued to be observed by 36 and 14 percent of patrons respectively, suggesting that more aggressive enforcement is necessary.

#### **Results from an Air Monitoring Study in Restaurants, Bars, and Bowling Facilities**

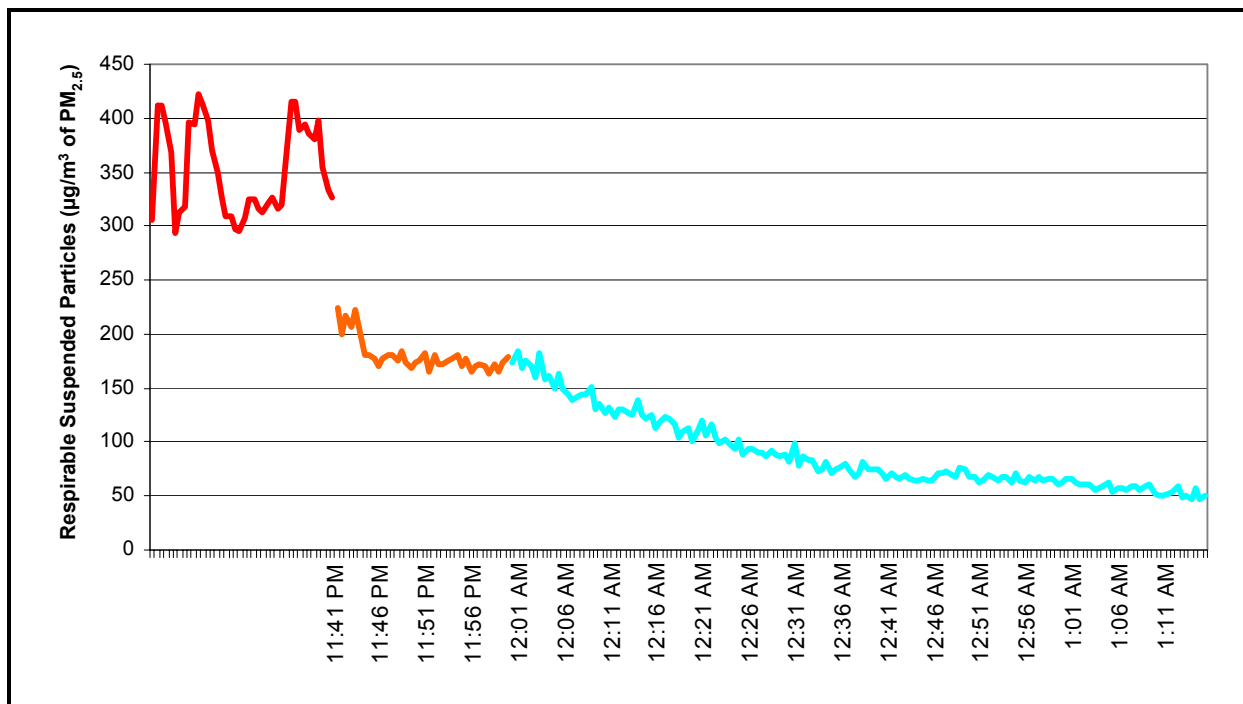
**Overview.** A study conducted by the Roswell Park Cancer Institute (Roswell Park) assessed the impact of the CIAA on air quality in various hospitality venues in Western New York. The objective was to quantify the change in respirable suspended particles in the air in hospitality venues in Western New York before and after implementation of the smoking regulations on July 24, 2003.

**Methods.** Roswell Park measured the air quality in 18 venues that allowed smoking before July 24, including 7 bars, 7

restaurants, 2 bowling alleys, 1 pool hall, and 1 bingo hall. The air was sampled in the month before the law and again within 3 months after the law went into effect. Venues were selected to provide a broad range of size, location, and type of venue, and air sampling before and after the law was conducted on the same day of the week and at approximately the same time of day. Analyses consist of summary statistics.

**Results.** Prior to implementation of the law, smoking was observed in all 18 venues. After the law, smoking was detected in only one location. **Exhibit 6-13** shows an example of air monitoring done in a bar on a normal smoking night and on the night the new law went into effect. In less than 2 hours after the law went into effect and smoking stopped, the level of respirable particulate matter dropped to just 15 percent of the level on a normal smoking night.

**Exhibit 6-13. Air Quality Over Time in a Western New York Bar**



In 14 sampled bars and restaurants with active smoking before the law, the average level of PM<sub>2.5</sub> was 412 µg/m<sup>3</sup>. After the law, the average level in these same venues dropped to 27 µg/m<sup>3</sup>, an average 90 percent drop. Someone working 8 hours



a day 250 days a year in these venues would be exposed to PM2.5 levels seven times greater than the maximum annual exposure level set by the U.S. Environmental Protection Agency (EPA) to protect the public health in its National Ambient Air Quality Standards.

In addition to bars, four large recreation venues (two bowling alleys, one pool hall, and one bingo hall) were also sampled before and after the law. In these venues, PM2.5 levels dropped on average 77 percent after the law.

**Discussion.** This study provides anecdotal evidence that the new law significantly reduced exposure of New York hospitality workers and patrons to harmful secondhand smoke. Although it represents only one region of the state and a relatively small sample of venues, the results were consistent across the individual venues.

### ***Results from a Study of Hospitality Workers' Exposure to Secondhand Smoke***

**Overview.** Prior to implementation of the comprehensive CIAA, RTI began a study designed to assess the impact of the law on tobacco smoke exposure among a cohort of nonsmoking hospitality workers in areas of New York not covered by local smoke-free workplace laws. Baseline data were collected prior to implementation of the state law, with follow-up occurring among the same study participants 3, 6, and 12 months after the law went into effect. We present the results of the baseline and 3-month data collection.

**Methods.** To assess the impact of New York's CIAA on exposure to secondhand smoke among current employees of restaurants, bars, or bowling facilities, we conducted a brief telephone survey of and obtained saliva specimens from a cohort of such workers prior to implementation of the law and 3 months after the law went into effect. The brief survey assessed self-reported exposure to secondhand smoke in the workplace and other settings, respiratory symptoms in the past 4 weeks, sensory irritation in the past 4 weeks (eye, nose, throat), and attitudes toward exposure to secondhand smoke. Additional details of the study are presented in Chapter 5.

For the survey data, all participants who completed baseline and 3-month follow-up surveys were included in the analysis. We performed pre-post tests using the Wilcoxon sign rank test for nonnormally distributed continuous variables and McNemar's chi-square test for dichotomous variables (e.g., any respiratory symptoms).

**Results.** For the baseline study, 134 potential participants called the toll-free number. Of these, a total of 68 participants were eligible and completed both the interview and a saliva sample, 18 completed only the interview, and 11 provided only a saliva sample. For the 3-month follow-up, we attempted to recontact the 97 participants who either completed the questionnaire or provided a saliva sample. Of these, 72 were eligible, 94.4 percent (68/72) completed the questionnaire, 87.5 percent (63/72) provided a saliva sample, and 81.9 percent (59/72) provided both. Nine completed only the interview, and four completed only the saliva sample. At the baseline and 3-month follow-up, 1.3 percent (1/79) and 4.8 percent (3/63), respectively, provided a saliva specimen that was insufficient for testing.

Participants who completed baseline and follow-up surveys were included in the analysis of the survey data ( $n = 61$ ). Those who provided a valid saliva sample below 60 ng/mL at both points in time were included in the analysis of cotinine ( $n = 49$ ).

At baseline, participants were exposed to high levels of secondhand smoke at their hospitality jobs, averaging 13.5 hours of exposure in the workplace over 4 days, with 95 percent of participants reporting exposure to secondhand smoke at any of their hospitality jobs (**Exhibit 6-14**). Total hours of exposure, including hospitality workplaces, nonhospitality workplaces, and other locations, averaged 16.5 hours for workers before smoking was prohibited. With low levels of exposure at nonhospitality workplaces and at all other locations (3 hours) at baseline, workplace exposure at hospitality jobs constituted the majority (82 percent) of total exposure to secondhand smoke before the law went into effect.

**Exhibit 6-14. Mean Exposure to Secondhand Smoke for Hospitality Workers in Both Waves of the Study [95 Percent Confidence Interval], Number of Observations**

Exposure to Secondhand Smoke	Wave I	Wave II	P-Value
Proportion exposed to secondhand smoke at hospitality workplaces	0.95 [0.89, 1.01] 59	0.24 [0.13, 0.35] 59	< 0.001 <sup>a</sup>
Total hours exposed to secondhand smoke	16.5 [13.55, 19.45] 59	5.2 [2.73, 7.655] 59	< 0.001 <sup>b</sup>
Hours exposed to secondhand smoke at hospitality workplaces	13.5 [10.82, 16.2] 59	2.18 [0.70, 3.66] 59	< 0.001 <sup>b</sup>
Hours exposed to secondhand smoke at all other locations (includes nonhospitality workplace exposure)	2.99 [1.79, 4.193] 59	3.01 [1.23, 4.79] 59	0.45 <sup>b</sup>

<sup>a</sup>P-value for McNemar's Chi-Square Test.<sup>b</sup>P-value for Wilcoxon Sign Rank Test.

Results of the follow-up show a significant decline in workers' self-reported exposure. The percentage of hospitality workers exposed to secondhand smoke declined by 75 percent ( $p < 0.001$ ), from 95 percent to 24 percent. Total secondhand smoke exposure from all sources decreased from 16.5 hours to 5.2 hours, representing a decline of 68 percent ( $p < 0.001$ ) at follow-up. The decline in secondhand smoke exposure in hospitality workplaces represents an even greater change in exposure levels before and after the smoking prohibition went into effect. Secondhand smoke exposure in those workplaces declined by 84 percent ( $p < 0.001$ ), from 13.5 to 2.2 hours.

Measured levels of cotinine in saliva samples of hospitality workers before and after the law went into effect are shown in **Exhibit 6-15**, using 60 ng/mL and 15 ng/mL of cotinine as a cutoff for excluding potential smokers. Consistent with the declines in self-reported exposure, cotinine levels decreased significantly at the 3-month follow-up. At baseline, cotinine levels averaged 7.06 ng/mL and 4.52 ng/mL using the 60 and 15 ng/mL cutoffs, respectively. Using 60 ng/mL as the cutoff, average cotinine levels declined from 7.06 ng/mL to 2.31 ng/mL or by 67 percent ( $p < 0.001$ ) following the regulation. Similarly, using 15 ng/mL as the cutoff, cotinine levels dropped from 4.52 ng/mL to 1.71 ng/mL or 62 percent ( $p < 0.01$ ).

**Exhibit 6-15. Change in Mean Cotinine Levels [95 Percent Confidence Interval], Number of Observations**

Cotinine Level (nanograms per milliliter)	Wave I	Wave II	P-value <sup>a</sup>
Mean cotinine level (maximum < 60 ng/mL)	7.06 [4.19, 9.93] 49	2.31 [1.04, 3.58] 49	< 0.001
Mean cotinine level (maximum < 15 ng/mL)	4.52 [3.45, 5.60] 44	1.71 [1.41, 2.01] 44	< 0.001

<sup>a</sup>P-value for Wilcoxon Sign Rank Test.

At baseline, 87 percent of hospitality workers experienced any one of three sensory symptoms and reported an average of 1.8 sensory symptoms. Roughly 65 percent of workers reported experiencing sensory symptoms of red eyes or nose irritation, and 51 percent experienced a sore/scratchy throat (**Exhibit 6-16**).

By follow-up, the presence of one or more of the sensory symptoms decreased by 38 percent ( $p < 0.01$ ), from 87 percent to 54 percent, and all individual symptoms declined significantly. The percentage of workers experiencing irritation of the eyes, nose, and throat declined by 62 percent ( $p < 0.01$ ), 34 percent ( $p < 0.01$ ), and 45 percent ( $p < 0.01$ ), respectively. Similarly, the total number of sensory symptoms experienced (symptom scale) declined by 47 percent ( $p < 0.01$ ).

Before the law went into effect, approximately 59 percent of workers experienced any one of the following symptoms: wheezing/whistling in chest, shortness of breath, coughing in the morning, coughing during the day or at night, or bringing up any phlegm. The most common respiratory symptom experienced was coughing during the day or at night, with 39 percent experiencing that symptom (see Exhibit 6-16). The symptom scale shows that participants reported experiencing an average of 1.45 respiratory symptoms at baseline. At follow-up, the only statistically significant change in respiratory symptoms was a decline in coughing in the morning—dropping by 46 percent, from 30 percent to 16 percent ( $p = 0.03$ ).

**Exhibit 6-16. Proportion of Hospitality Workers Reporting Sensory Symptoms [95 Percent Confidence Interval], Number of Observations for Workers in Both Waves of the Study**

	Wave I	Wave II	P-value
<b>Sensory symptoms</b>			
Proportion with red or irritated eyes	0.65 [0.53, 0.77] 60	0.25 [0.137, 0.363] 60	< 0.01 <sup>a</sup>
Proportion with runny nose, sneezing, or nose irritation	0.62 [0.50, 0.75] 61	0.41 [0.28, 0.54] 61	< 0.01 <sup>a</sup>
Proportion with sore or scratchy throat	0.51 [0.38, 0.64] 61	0.28 [0.16, 0.39] 61	< 0.01 <sup>a</sup>
Proportion that experienced any one of sensory symptoms	0.87 [0.78, 0.96] 61	0.54 [0.41, 0.67] 61	< 0.01 <sup>a</sup>
Sum of sensory symptoms (sensory symptom scale)	1.77 [1.5, 2.03] 61	0.93 [0.67, 1.2] 61	< 0.01 <sup>b</sup>
<b>Upper respiratory symptoms</b>			
Experienced wheezing or whistling in chest	0.25 [0.14, 0.37] 59	0.14 [0.05, 0.23] 59	0.07 <sup>a</sup>
Felt short of breath	0.23 [0.12, 0.34] 60	0.13 [0.04, 0.22] 60	0.11 <sup>a</sup>
Usually cough in morning	0.30 [0.18, 0.41] 61	0.16 [0.07, 0.26] 61	< 0.03 <sup>a</sup>
Cough at all during the rest of the day or at night	0.39 [0.27, 0.52] 61	0.33 [0.21, 0.45] 61	0.39 <sup>a</sup>
Bring up any phlegm	0.28 [0.16, 0.39] 61	0.28 [0.16, 0.39] 61	No change
Experienced any one of respiratory symptoms	0.59 [0.46, 0.72] 61	0.52 [0.40, 0.65] 61	0.37 <sup>a</sup>
Sum of respiratory symptoms (respiratory symptom scale)	1.45 [1.06, 1.86] 61	1.03 [0.68, 1.39] 61	0.16 <sup>b</sup>

<sup>a</sup>P-value using McNemar Chi-Square Test.<sup>b</sup>P-value using Wilcoxon Sign Rank Test.

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*Three months after implementation of a statewide law prohibiting smoking in restaurants, bars, and bowling facilities, workers in these establishments experienced substantial reductions in exposure to secondhand smoke measured by self-reported exposure and saliva cotinine.*

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**Discussion.** The results of this study show that such restrictions are an effective tool for protecting hospitality workers. Three months after implementation of a statewide law prohibiting smoking in restaurants, bars, and bowling facilities, workers in these establishments experienced substantial reductions in exposure to secondhand smoke measured by self-reported exposure and saliva cotinine. Secondhand smoke exposure at locations away from work, however, remained fairly constant. Our results suggest that some hospitality workers may still be exposed to secondhand smoke even after the law went into effect. However, both the self-reported exposure and cotinine results demonstrate that the law is having its intended effect of reducing employee exposure to a toxic substance in the workplace. These findings are corroborated by the observational study and air monitoring studies described above.

### 6.3.3 Attitudes Toward the CIAA and Secondhand Smoke

In this section, we summarize New Yorkers' attitudes toward the CIAA and other attitudes related to secondhand smoke exposure from the CPS, ATS, and Employee Health Study. The CPS permits an examination of trends in attitudes related to support for restricting smoking in various settings among New Yorkers and residents from the remaining United States. From the ATS, we can summarize attitudes among all New Yorkers, smokers, and nonsmokers from 1 month prior to implementation of the law until the second quarter of 2004. From the Employee Health Survey, we summarize attitudes among nonsmoking hospitality workers from 1 month prior to implementation through 6 months after the law.

#### **Support for the CIAA**

**Overview.** To provide a picture of trends in attitudes toward policies that restrict smoking in workplaces, restaurants, and bars, we analyze data from the CPS from 1992 through 2002 for New York and the remaining United States. These data provide context for policy changes in the period leading up to the comprehensive CIAA.

**Methods.** We estimate adults' attitudes toward various policies based on questions from the CPS, applying appropriate

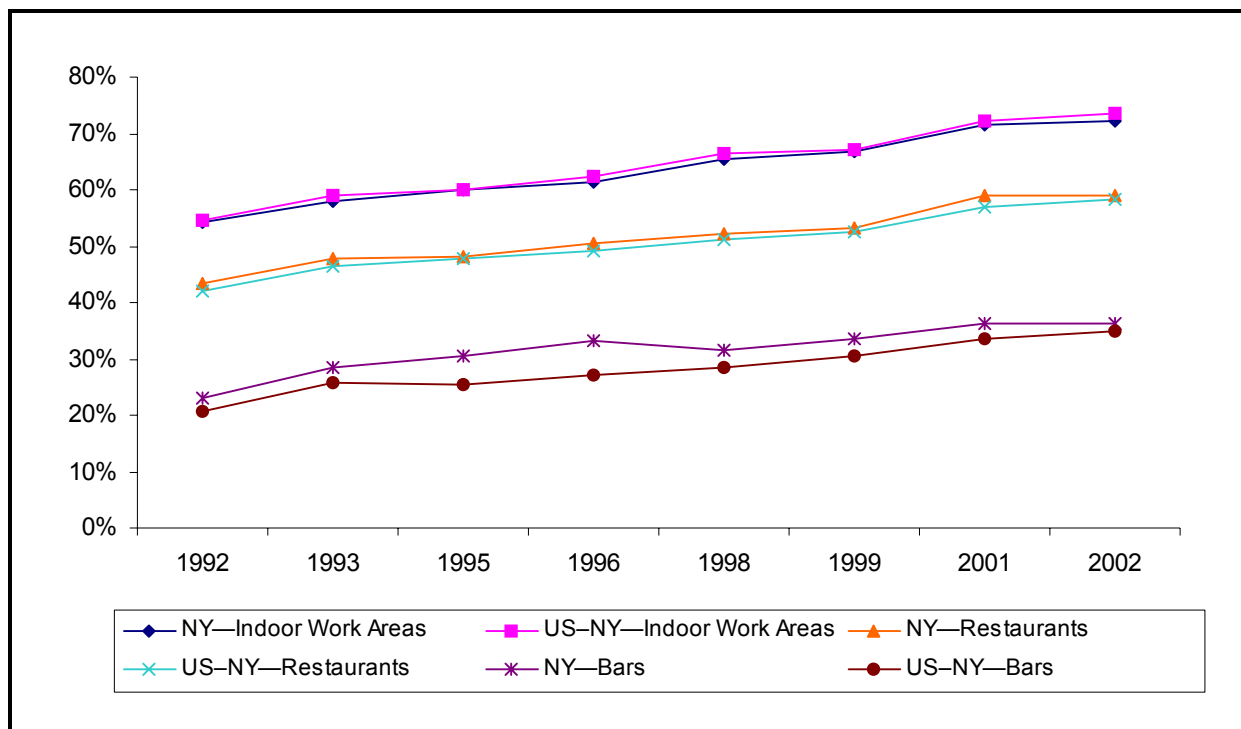
survey weights and adjusting for the complex survey design (Stata 8.0). Support for various policies is based on the following type of question:

- "In [indoor work areas/restaurants/bars], do you think that smoking should be allowed in all areas, in some areas, or not allowed at all?"

Based on these questions, we report the prevalence who stated that they think smoking should not be allowed at all for each of the three settings.

**Results.** *Exhibit 6-17* presents attitudes about restricting smoking in workplaces, restaurants, and bars from the CPS from 1992 through 2002 for New York and the remaining United States. These trends show that New York was consistent with the national trend in terms of attitudes about banning smoking in workplaces, bars, and restaurants. The data indicate that support was highest for workplaces, followed by restaurants and then bars.

**Exhibit 6-17. Percentage of Adults Who Think Smoking Should be Banned in Various Settings, CPS 1992-2002**



### **Support for the CIAA from the ATS and Employee Health Survey**

**Overview.** In this section, we present data on New Yorkers' attitudes toward the CIAA. Because this law has a more significant impact on smokers than nonsmokers, we present summary statistics overall and by smoking status.

**Methods.** Respondents to the ATS were asked the following question about their support for the CIAA:

- "Are you personally in favor, opposed to, or indifferent to the recently enacted New York State law prohibiting smoking in all public and work places, including bars and restaurants?"

Participants from the Employee Health Survey were asked,

- "Do you personally favor or oppose the recently enacted New York State law prohibiting smoking in all workplaces, including bars and restaurants, or doesn't it make any difference?"

Based on these two questions, we report the percentage of New Yorkers and New York hospitality workers who support the law. For the ATS, we report the data before and after July 24, 2003, and in subsequent quarters of data. The percentage who favor the law was calculated by dividing the number who are in favor of the law by the number who responded that they were in favor, opposed, or indifferent to the law. We report the data for the Employee Health Survey in a similar fashion.

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*ATS data indicate that support for the law is growing over time—from 64 percent in the period from June to September 2003 to 74 percent in the second quarter of 2004.*

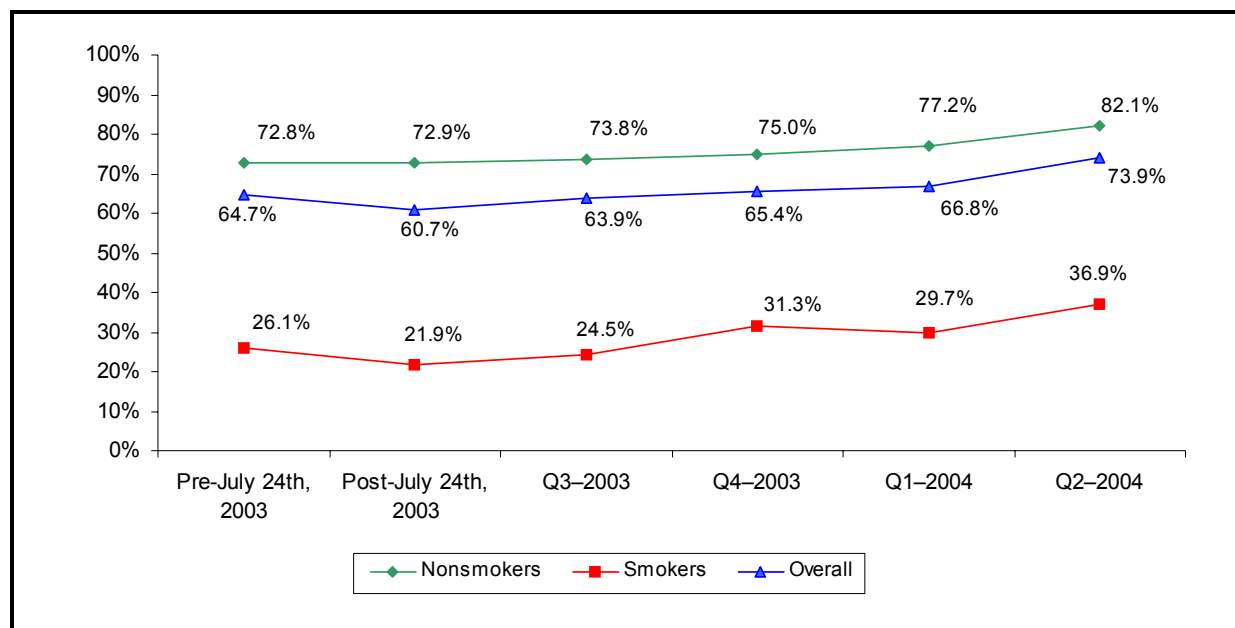
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**Results.** *Exhibit 6-18* shows the prevalence of New Yorkers, overall and by smoking status, who are in favor of the CIAA that bans smoking in all three of the areas asked about in the previous figure from the CPS. ATS data indicate that support for the law is growing over time—from 64 percent in the period from June to September 2003 to 74 percent in the second quarter of 2004. In addition, support increased from 24 percent to 37 percent among smokers and from 74 percent to 82 percent among nonsmokers. All of these changes are statistically significant.

Similarly, support among hospitality workers is relatively high and remained stable in all waves of the survey. For the 6-month follow-up survey, 68 percent supported the law.



**Exhibit 6-18. Percentage of Adults, Smokers, and Nonsmokers Who Support the CIAA Over Time, ATS Q3 2003–Q2 2004**

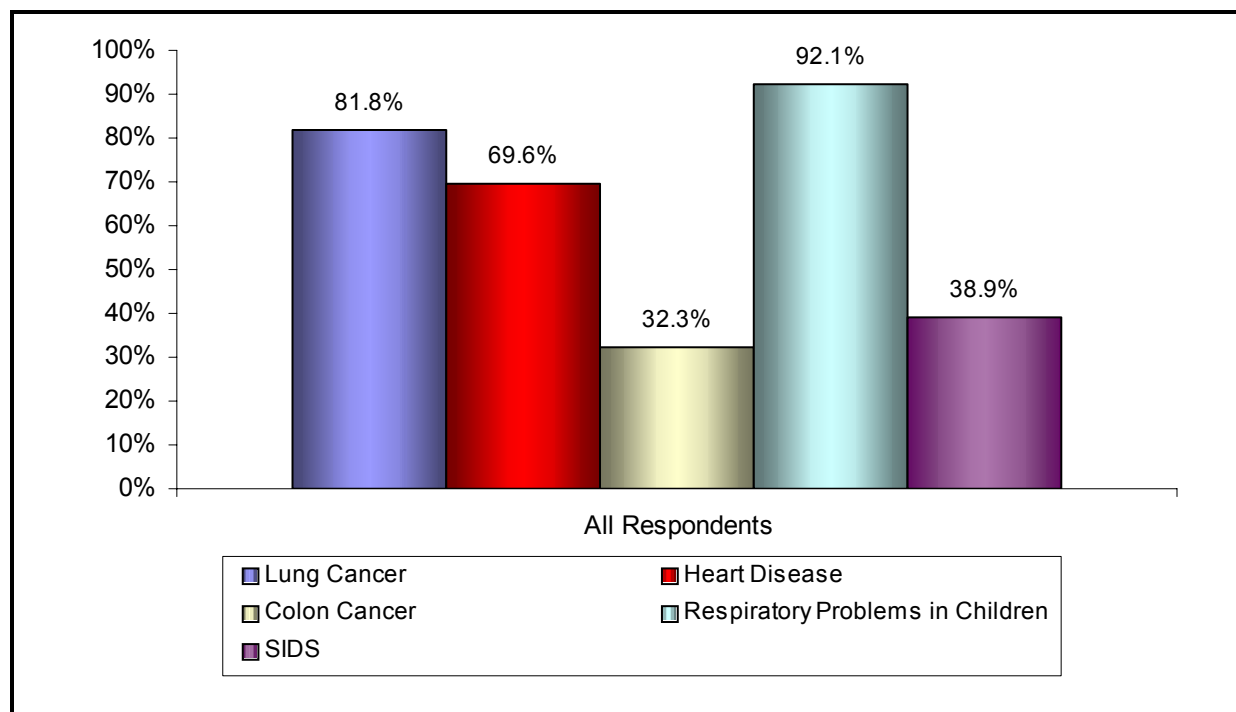
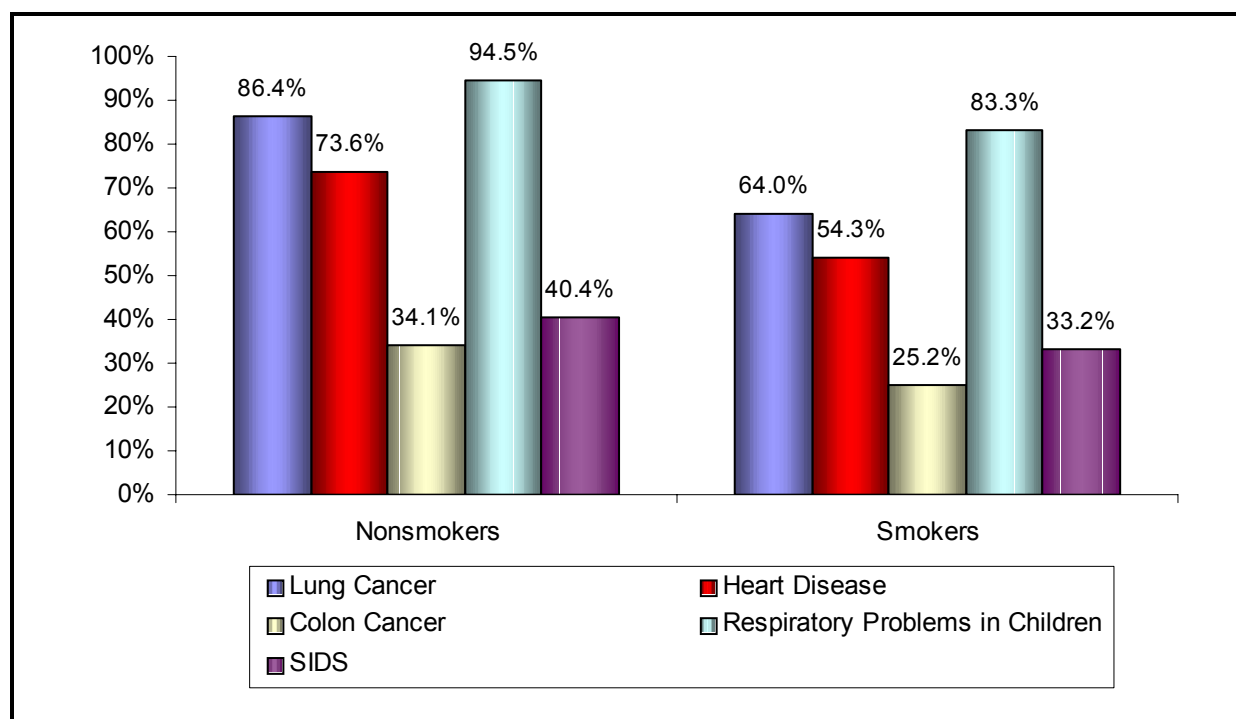


**Discussion.** Overall, we found that support for the law is high and increasing over time. As expected, support is higher among nonsmokers than smokers, but support increased significantly over time among smokers. In addition, roughly two-thirds of hospitality workers, who are most affected by the law, favor the law.

**Attitudes Toward Secondhand Smoke Exposure.** We now summarize New Yorkers' knowledge of the dangers of secondhand smoke overall and among smokers and nonsmokers. The ATS asks adults how strongly they agree or disagree that secondhand smoke exposure is associated with

- lung cancer,
- respiratory problems in children,
- colon cancer,
- heart disease, and
- sudden infant death syndrome (SIDS).

**Exhibits 6-19** and **6-20** illustrate that there is a tremendous amount of variation in the understanding of the risks of secondhand smoke overall and by smokers and nonsmokers. Roughly 92 percent of all adults agree that secondhand

**Exhibit 6-19. Percentage of Adults Who Agree that Secondhand Smoke is a Cause of Various Diseases, ATS Q3 2003–Q2 2004****Exhibit 6-20. Percentage of Adults Who Agree that Secondhand Smoke is a Cause of Various Diseases by Smoking Status, ATS Q3 2003–Q2 2004**

smoke exposure causes respiratory illness among children, whereas the comparable figure for colon cancer is 32 percent, which is not caused by exposure to secondhand smoke.

The corresponding levels of agreement for lung cancer, heart disease, and SIDS are 82 percent, 70 percent, and 39 percent respectively. Exhibit 6-20 illustrates differences between smokers and nonsmokers. Not surprisingly, smokers are less likely than nonsmokers to agree about the dangers of secondhand smoke exposure.

#### **6.3.4 News Media Coverage of the CIAA and Secondhand Smoke**

##### **Overview**

Beginning on February 1, 2004, RTI began to receive news articles from Burrelle's Clipping Service. To date, we have received and coded all news articles from February 1 through March 31, 2004. In this section, we summarize the proportion of tobacco-related news pertaining to secondhand smoke and the CIAA. In addition, we characterize the slant of the news coverage—pro-tobacco (e.g., against limits on smoking in public places and taxes on cigarettes), antitobacco (e.g., favoring tobacco control efforts such as banning smoking, increasing cigarette taxes, limiting tobacco advertising and promotions), or neutral—to understand how the news media are covering the topic and how this compares to the general population's support for the law.

##### **Methods**

The protocol for capturing and coding news media is described in Section 5.2 of this report. Our summary in this section of the report focuses on the "secondhand smoke and related smoke-free policies" theme (one of 14 themes). Within this theme, articles are further classified by topics:

- a. Secondhand smoke health and comfort issues (the effect of others' smoke on the health of children and/or adults)
- b. Indoor smoking and bans (implementation, compliance, enforcement, and effects of bans; not intended for articles primarily about the economic effects of bans)
- c. Outdoor smoking and bans (bans in outdoor locales; includes anything that is not entirely enclosed)

- d. Domestic smoking and bans (bans on smoking within private spaces, such as homes and personal vehicles)
- e. General smoking bans (bans that do not mention specific places)

In this section, we produce summary statistics on the percentage of all news articles that relate to secondhand smoke and policies that cover one or more of these topics. Within each of these topics, we summarize the percentage of the articles that are pro-tobacco, antitobacco, or neutral in slant for the available 2 months of data.

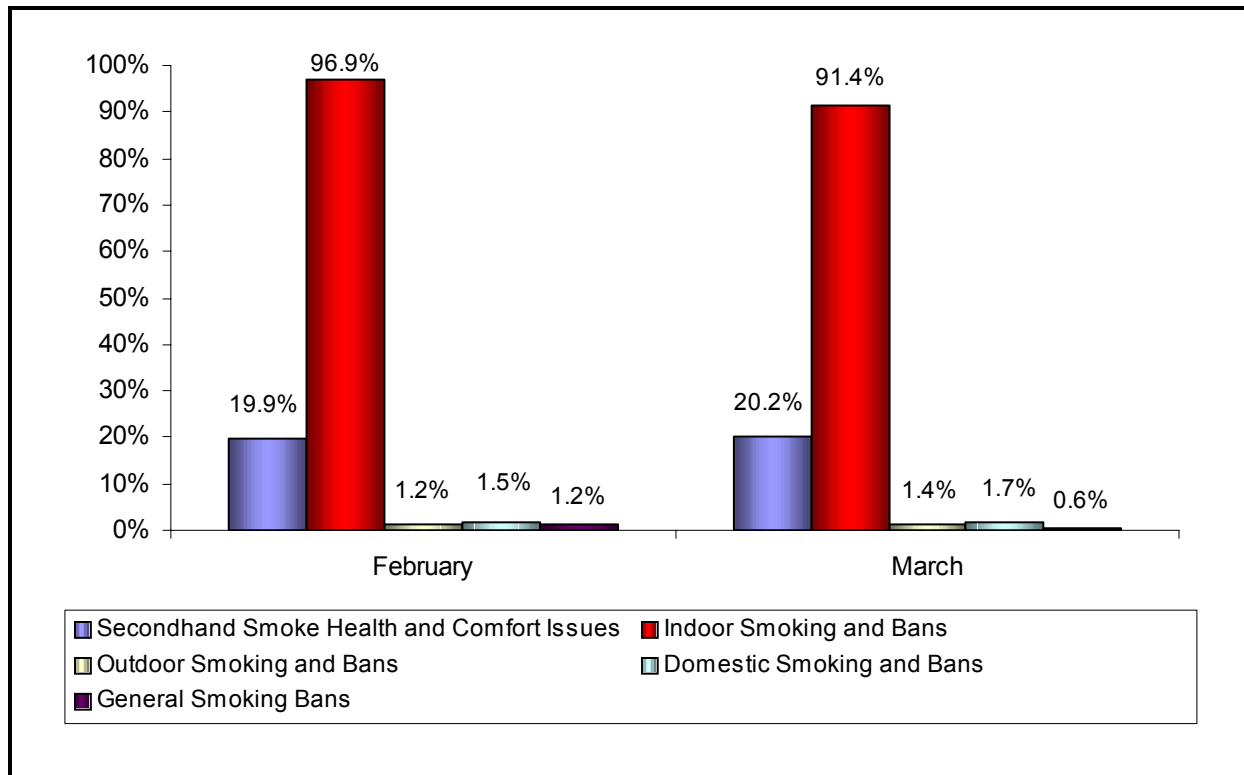
### **Results**

Out of a total of 1,140 articles coded for February and 1,383 articles coded for March, 517 articles (45.4 percent) and 642 articles (46.4 percent) had a theme of “secondhand smoke and related smoke-free policies,” respectively. In February, 15.1 percent of articles with the secondhand smoke theme had a pro-tobacco slant, 42.7 percent had an antitobacco slant, and 42.2 percent were neutral. This distribution noticeably changed in March, when the percentage of secondhand smoke-related articles with a pro-tobacco slant decreased to 9.8 percent, the percentage of secondhand smoke-related articles with an antitobacco slant increased to 62.3 percent, and the percentage of neutral secondhand smoke-related articles decreased to 28.0 percent.

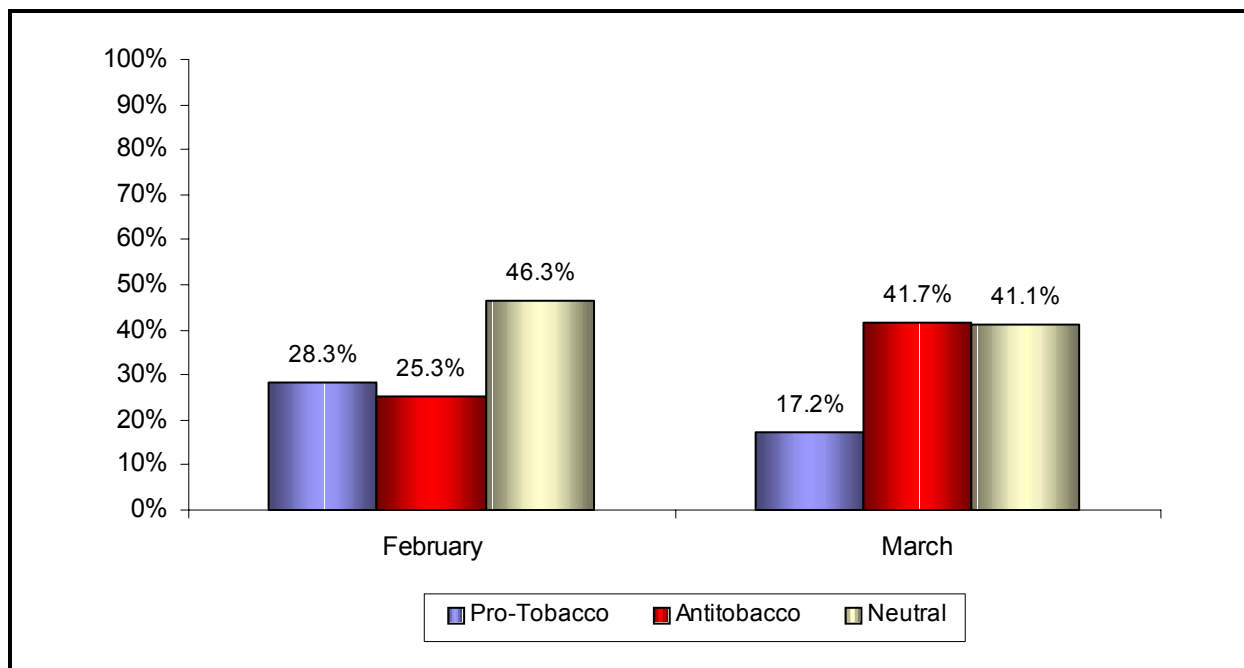
Based on **Exhibit 6-21**, which illustrates the distribution of topics specific to the secondhand smoke theme, a majority of articles (more than 90 percent) covered indoor smoking and bans, followed by articles covering secondhand smoke health and comfort issues (approximately 20 percent). Because of the small number of articles covering the topics of outdoor smoking and bans, domestic smoking and bans, and general smoking bans, the following figures focus on the distribution of pro-tobacco, antitobacco, and neutral articles within the topics of indoor smoking and bans and secondhand smoke health and comfort issues.

The distribution of pro-tobacco, antitobacco, and neutral secondhand smoke articles addressing the topic of indoor smoking and bans is presented in **Exhibit 6-22**. In February,

**Exhibit 6-21. Percentage of Articles that Mention Various Secondhand Smoke-Related Topics Among Secondhand Smoke-Related News Articles, February–March 2004 News Media Tracking Database**



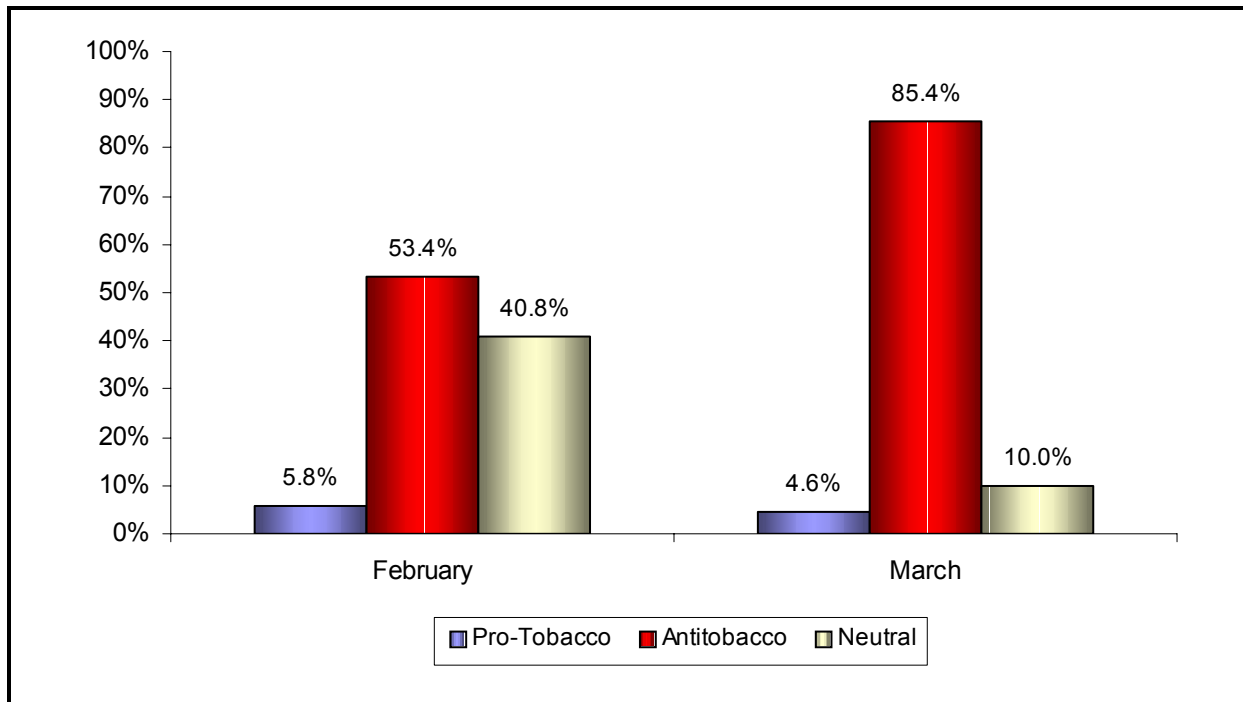
**Exhibit 6-22. Editorial Slant of Secondhand Smoke-Related News Articles Covering Indoor Smoking and Bans, February–March 2004 News Media Tracking Database**



the percentage of articles with a pro-tobacco slant was slightly higher (28.3 percent) than the percentage of articles with an antitobacco slant (25.3 percent); 46.3 percent of articles were neutral. In March, the percentage of pro-tobacco articles and neutral articles decreased to 17.2 percent and 41.1 percent, respectively, whereas the percentage of antitobacco articles increased to 41.7 percent.

**Exhibit 6-23** presents the distribution of pro-tobacco, antitobacco, and neutral secondhand smoke articles addressing the topic of secondhand smoke health and comfort issues in February and March. The percentage of articles with a pro-tobacco slant remained approximately the same between February and March. In contrast, the percentage of articles with an antitobacco slant increased from 53.4 percent in February to 85.4 percent in March. The percentage of neutral articles dramatically decreased from 40.8 percent in February to 10.0 percent in March.

**Exhibit 6-23. Editorial Slant of Secondhand Smoke-Related News Articles Covering Secondhand Smoke Health and Comfort Issues, February–March 2004 News Media Tracking Database**



### **Discussion**

In contrast to the high proportion of support for the CIAA from the ATS, news media coverage of the CIAA in February 2004 was rather negative as illustrated by the slant of secondhand smoke-related news coverage on indoor smoking and bans—nearly 30 percent of the coverage was negatively slanted at a time when approximately 80 percent either favored or were indifferent to the law. Opponents of the CIAA appear to be using the media to voice their opposition to the law. However, in March, the slant was more in line with public opinion. We will continue to monitor these data to examine the trends in news coverage over time. Not surprisingly, a majority of secondhand smoke-related articles covering health and comfort issues to date were supportive of tobacco control.

#### **6.3.5 Behavior Change Related to Exposure to Secondhand Smoke**

In this section, we examine actions that individuals and households take in response to secondhand smoke exposure, such as banning smoking in homes and family cars and self-reported changes in patronage of restaurants and bars before and after implementation of the CIAA on July 24, 2003.

##### ***Restrictions on Smoking in the Home***

**Overview.** A strong indicator for changing social norms is the percentage of households overall and by smoking status that chose to ban smoking in the home. To provide context for the evaluation, we present trends in the percentage of households that completely banned smoking indoors from 1992 through 2002 using the CPS. We then present similar data from the more recent ATS.

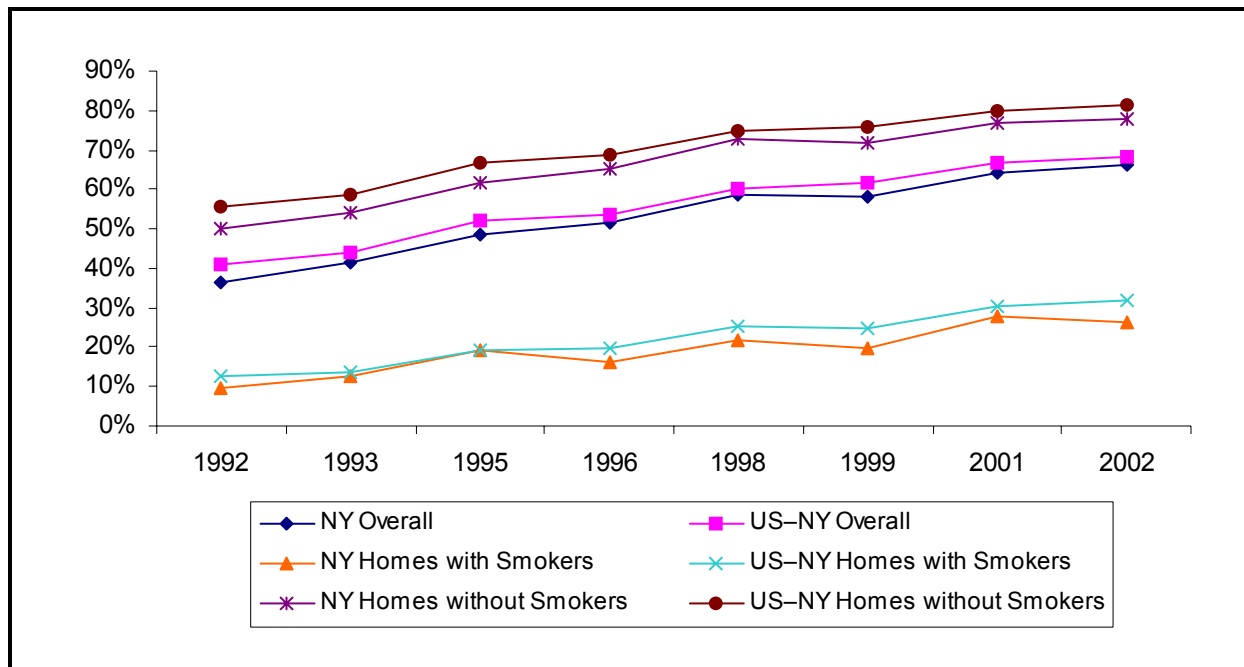
**Methods.** CPS data for this section are based on the following question:

- “Which statement best describes the rules about smoking in your home?
  - No one is allowed to smoke anywhere
  - Smoking is allowed in some places or at some times
  - Smoking is permitted anywhere”

The ATS has a very similar question. Based on this question, we estimated the proportion of households that completely banned smoking from the CPS and ATS. In addition, for the CPS, we are able to determine whether there are any smokers in the household so that we can examine the prevalence of banning smoke in households with and without smokers.

**Results.** *Exhibit 6-24* shows that the percentage of households that ban smoking completely has increased markedly in a decade from 37 percent to 66 percent in New York and from 41 percent to 69 percent in the remaining United States. However, this figure also indicates a large gap between households with and without smokers. As of 2002, only 26.3 percent and 32.0 percent of households with smokers completely restricted smoking in New York and the remaining United States, respectively—creating roughly a 50 percentage point gap between households with and without smokers.

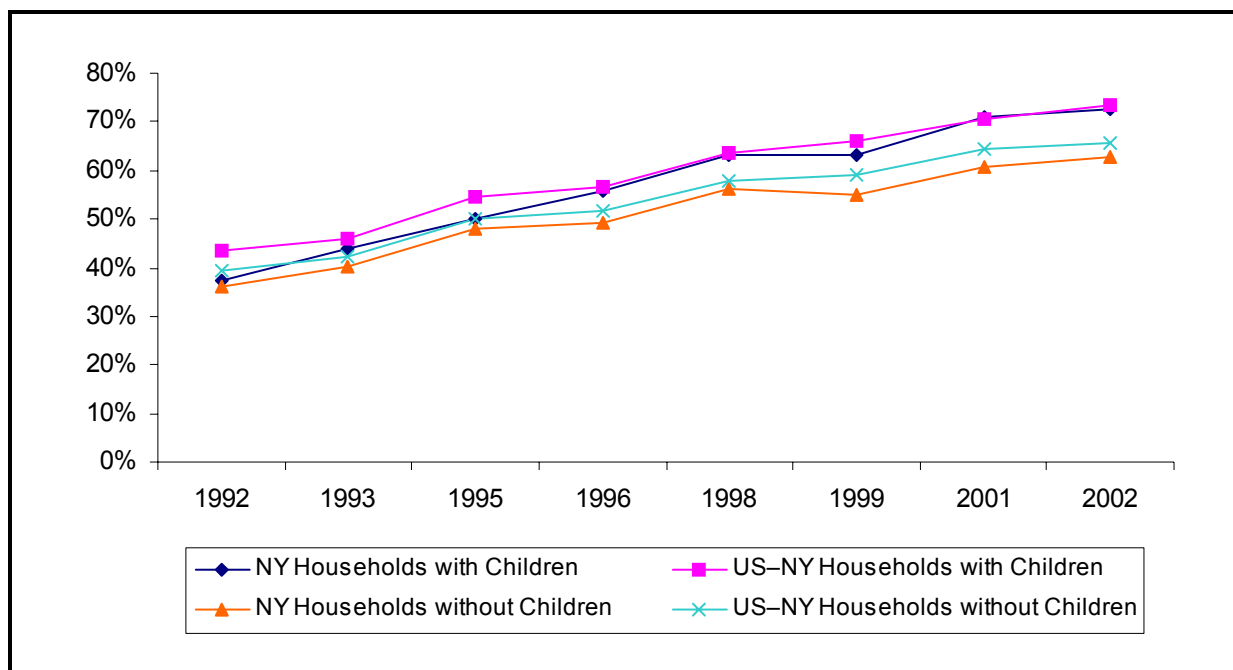
**Exhibit 6-24. Percentage of Households That Completely Ban Smoking in the Home Overall and by the Presence of Smokers in the Home, CPS 1992–2002**



*Exhibit 6-25* shows the percentage of households overall and by those with and without children aged 18 and under in the home. This figure indicates that in New York in 1992, the



**Exhibit 6-25. Percentage of Households That Completely Ban Smoking in the Home Overall and by the Presence of Children ( $\leq$  Age 18) in the Home, 1992–2002**



prevalence of restricting smoking in the home was similar for households with and without children. However, by 2002, the prevalence of complete bans was 10 percentage points higher in homes with children (72.8 vs. 62.8 percent), suggesting that greater awareness of the dangers of secondhand smoke to children may have spurred change among parents.

Data from the ATS from Q3–2003 to Q2–2004 suggest that the proportion of households that completely ban smoking has not increased considerably since the February 2002 CPS data. Overall, 68.9 percent of adults indicated that smoking is not allowed anywhere in the home. The prevalence of a complete ban was 76.2 percent in households with children under age 18, compared with 63.7 percent in households without children. Because a high proportion of adults did not answer the question that asks whether there are smokers in the home, we are not able to reliably report how the prevalence of smoking bans varies by the presence of a smoker in the home.

**Discussion.** From 1992 through 2002, the proportion of homes that completely banned smoking steadily increased and

then appeared to plateau from 2002 to 2004. However, because the CPS and the ATS are not administered in the same way (one is in person and one is by telephone), the data may not be completely comparable. Both data sources indicate that households with children are more likely to have rules banning smoking anywhere in the home.

### ***Self-Reported Likelihood of Changing Patronage of Hospitality Venues in Response to the CIAA***

**Overview.** Because the hospitality industry expresses concerns about the potential impact of the CIAA on their business, we asked ATS respondents whether they are more or less likely to frequent bars and restaurants after implementation of the CIAA or if their behavior has not changed. Below, we present summary statistics from the period before July 24, 2003, and subsequent periods for all adults, smokers, and nonsmokers.

**Methods.** Since the beginning of the ATS in late June 2003, we have asked the following questions, with slight wording changes for the period immediately prior to implementation of the CIAA:

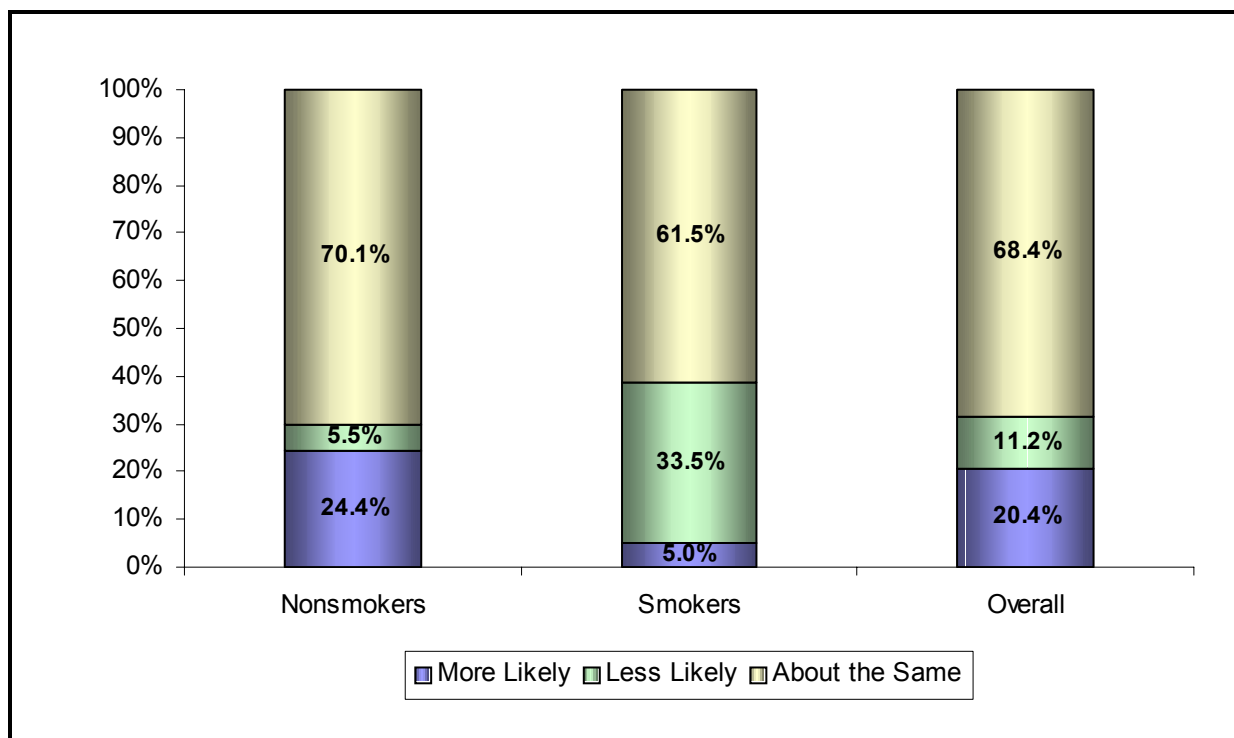
- Since smoking was prohibited in bars in New York State in July 2003, are you more likely to visit them, less likely to visit them, or the smoking ban hasn't affected how often you go to bars?
- Since smoking was prohibited in restaurants in New York State in July 2003, are you more likely to visit them, less likely to visit them, or the smoking ban hasn't affected how often you go to restaurants?
- Have you made any special trips outside New York State for the purpose of visiting restaurants or bars where smoking is allowed?

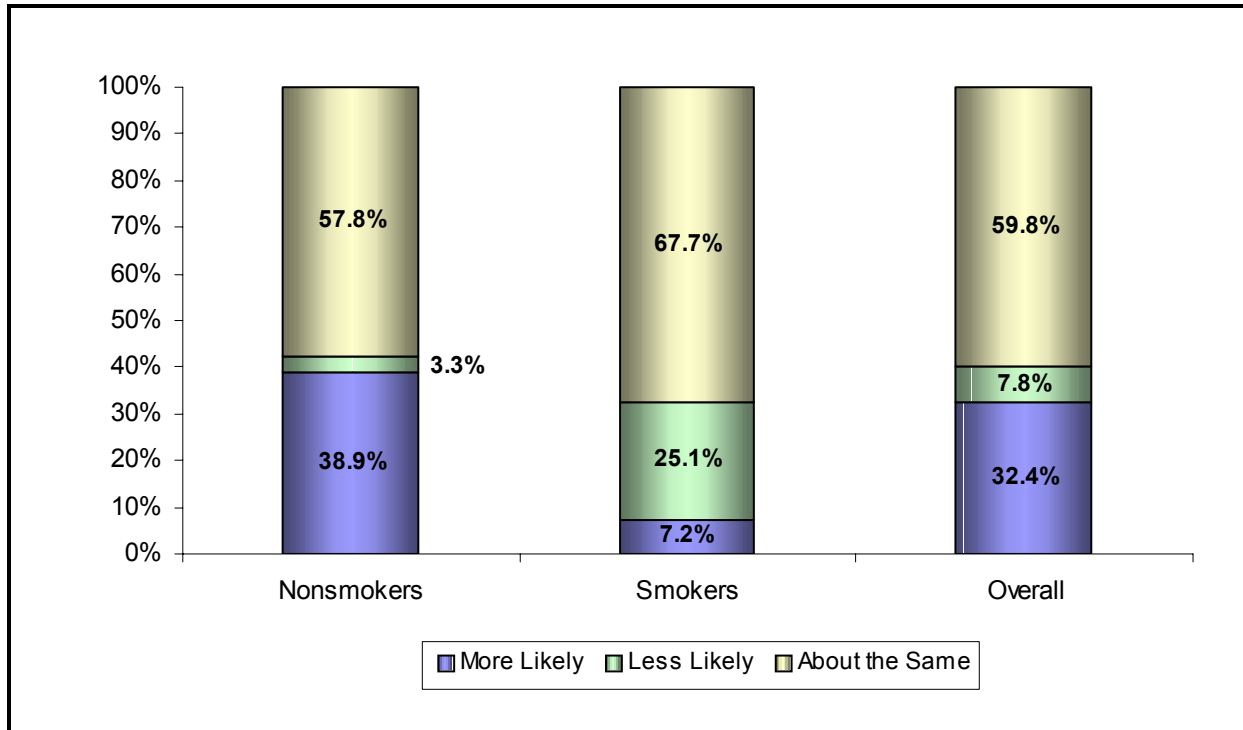
We estimated the prevalence of those who report frequenting bars/restaurants more often, less often, and the same for each quarter of the ATS and for the period prior to July 24 and tested for statistically significant changes. Summary statistics are calculated using appropriate weights and adjustments for survey design effects (Stata 8.0).

**Results.** There were no statistically significant changes in self-reported likelihood of frequenting bars and restaurants as a

result of the CIAA, so we present data pooled across all quarters overall and by smoking status of the respondent. **Exhibits 6-26** and **6-27** indicate that the majority of New Yorkers (overall, smokers, and nonsmokers) reported no change in patronage of bars and restaurants in response to the CIAA. Overall, a small fraction of adults say they are frequenting bars (11.2 percent) and restaurants (7.8 percent) less often. The percentage of New Yorkers who report going to bars and restaurants more often is 20.4 percent and 32.4 percent, respectively. Not surprisingly, these figures vary by smoking status: most nonsmokers who report a change indicate patronizing bars and restaurants more often and only a few indicate going less often, whereas the reverse is true for smokers.

**Exhibit 6-26. Likelihood of Adults to Patronize Bars in Response to the Clean Indoor Air Act, ATS Q3 2003–Q2 2004**

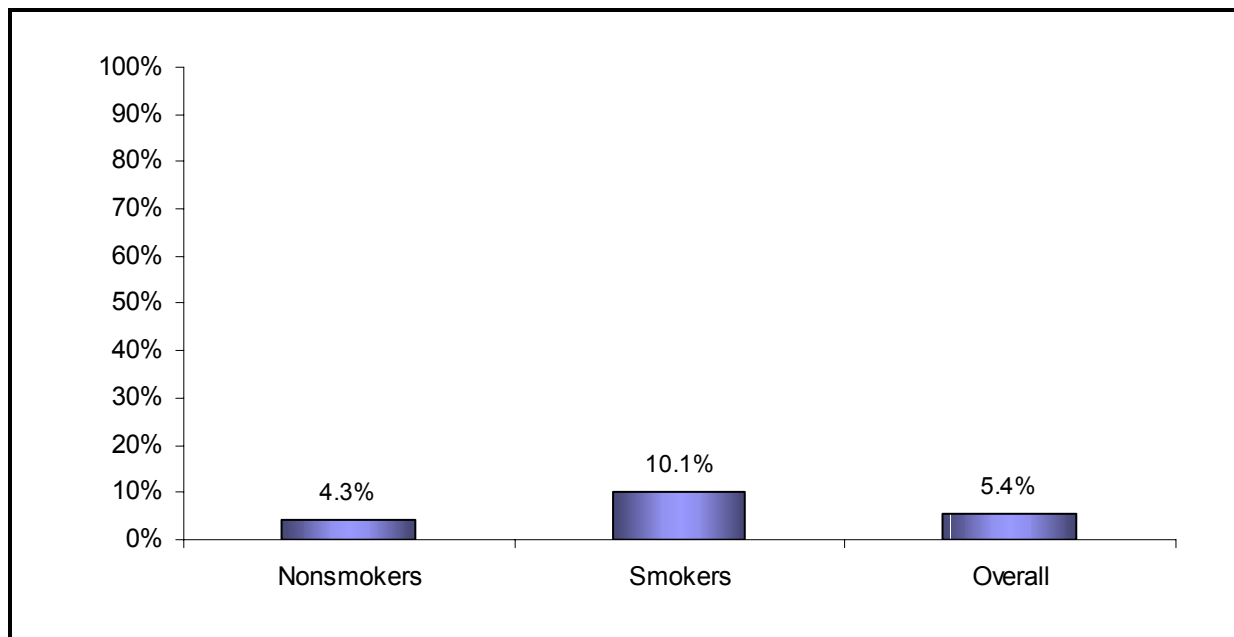


**Exhibit 6-27. Likelihood of Adults to Patronize Restaurants in Response to the Clean Indoor Air Act, ATS Q3 2003–Q2 2004**

**Exhibit 6-28** shows the percentage of adults who indicate that they have gone outside the state for the purpose of going to bars or restaurants where smoking is allowed. There were no statistically significant differences before and after implementation of the CIAA, so we pooled data across quarters to provide an overall prevalence. These data indicate that 5 percent of New Yorkers have made at least one trip outside of New York to patronize bars or restaurants where smoking was allowed. The prevalence is higher among smokers (10 percent) than nonsmokers (4 percent), as would be expected. Before the CIAA went into effect, 5 percent of smokers responded affirmatively to this question, possibly in response to similar laws already in effect or voluntary restrictions on smoking in restaurants.

**Discussion.** In the year following implementation of the CIAA, the majority of New Yorkers report no change in patronage of bars or restaurants as a result of the law, and they are more

**Exhibit 6-28. Percentage of Adults Who Report Making Trips Outside New York to Bars or Restaurants where Smoking is Allowed, ATS Q3 2003–Q2 2004**



likely to report an increase rather than a decrease in patronage. These findings are consistent with a growing body of research that indicates that such laws have either no effect on sales in bars and restaurants or a slight positive effect. For example, Bartosch and Pope (2002) examined trends in taxable meal receipts in more than 1,000 restaurants from 1992 through 1999 in Massachusetts communities with restrictive policies on smoking compared to those without such restrictions. The authors found no statistically significant relationship between policies and sales.

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*In the year following implementation of the CLAA, the majority of New Yorkers report no change in patronage of bars or restaurants as a result of the law, and they are more likely to report an increase rather than a decrease in patronage.*

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Another published study by Hyland, Cummings, and Nauenberg (1999) reported that hotels and restaurants in New York City experienced increases in taxable sales revenue after the 1995 Smoke-Free Air Act took effect. Finally, Glantz and Charlesworth (1999) compared hotel revenues and tourism rates before and after passage of 100 percent smoke-free restaurant ordinances in three states and six cities. The outcomes were hotel room revenues and hotel revenues as a fraction of total retail sales compared with pre-ordinance revenues and overall U.S. revenues. The authors found that the passage of smoke-free restaurant ordinances was

associated with an increase in hotel revenues in four localities, no significant change in four others, and a slowing in the rate of increase in one locality. The authors conclude that smoke-free restaurant ordinances do not negatively affect business.

### ***Trends in the Number of Licensed Bars***

**Overview.** One of the most prominent concerns heard during the debate that led up to enactment of the CIAA was that bars would be particularly hard hit economically. Concerns were raised that bars would close as a result of the law causing drops in employment and sales. Here we present data on the number of licensed bars for three regions of the state before and after the CIAA took effect in July 2003.

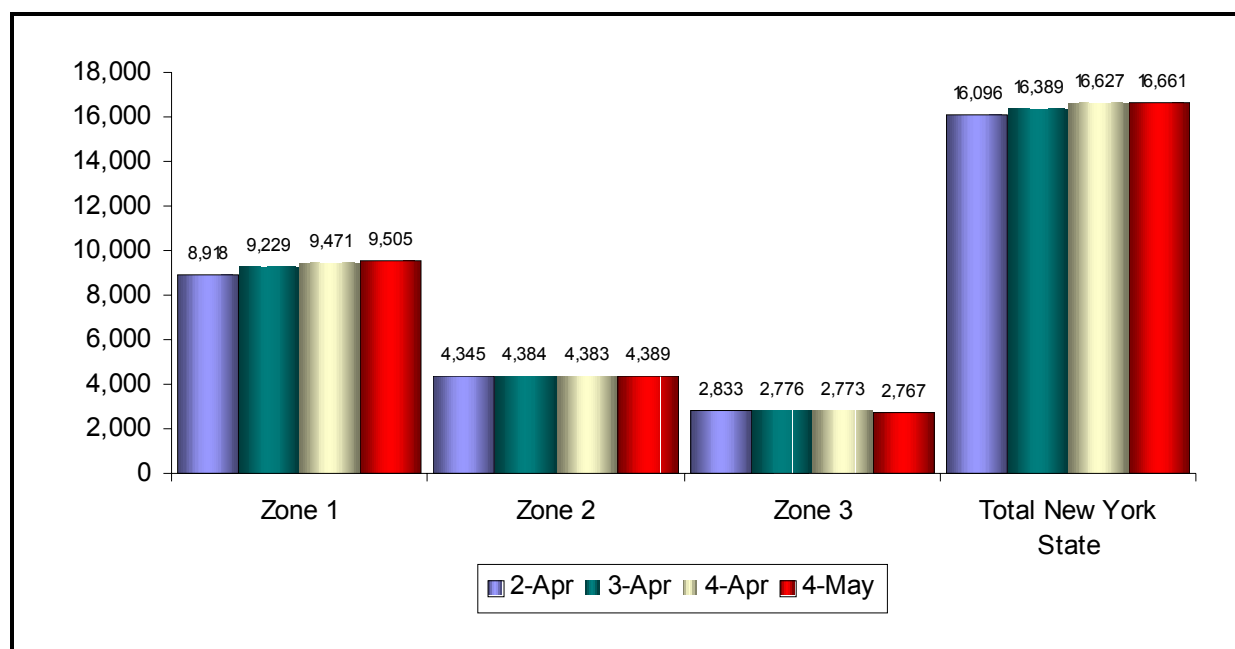
**Methods.** The Division of Alcoholic Beverage Control of the New York State Liquor Authority reports monthly summaries of the number of active liquor licenses by type of license for each county. The data reported are the number of active “on-premises” liquor licenses for each of four months: April 2002, April 2003, April 2004, and May 2004. Special data requests were made of the New York State Liquor Authority for the purposes of this report.

Data are reported for all counties combined and for three zones of the state:

- **Zone 1:** Bronx, Kings, Nassau, New York City, Queens, Richmond, Suffolk, and Westchester Counties
- **Zone 2:** Albany, Broome, Cayuga, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Jefferson, Lewis, Madison, Montgomery, Oneida, Onondaga, Orange, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, St. Lawrence, Ulster, Washington, and Warren Counties
- **Zone 3:** Allegany, Cattaraugus, Chautauqua, Chemung, Erie, Genesee, Livingston, Monroe, Niagara, Ontario, Orleans, Schuyler, Seneca, Steuben, Tioga, Tompkins, Wayne, and Wyoming Counties

**Results.** As shown in **Exhibit 6-29**, the total number of liquor licenses for “on-premise” consumption for across New York increased by 565 (3.5 percent) from April 2002 to May 2004 and has increased in each time period assessed. Between April

**Exhibit 6-29. Number of On-Premises Liquor Licenses in New York, April 2002 to May 2004**



Source: State Liquor Authority, Division of Alcoholic Beverage Control, monthly summary reports of Active On-Premises Liquor Licenses.

2002 and May 2004, the largest increases were observed in Zone 1 (587 more licenses, 6.5 percent increase) followed by Zone 2 (44 more licenses, 1.0 percent increase). Zone 3 experienced declines in the number of “on-premise” liquor licenses in each time period for a total decline of 66 licenses (2.3 percent). The largest decline occurred in Zone 3 from April 2002 to April 2003, prior to implementation of the CIAA.

**Discussion.** Overall, there are more bars in New York now than before the law, and the data do not suggest that the number of licensed bars sharply declined following implementation of the law. There are regional differences in trends in the number of licensed bars, which is likely related to general economic trends in different regions of the state. For example, the counties in Zone 1 have been gaining population over time, whereas many of the counties in Zone 3 have been losing population. Therefore, it is not surprising to see increases in the number of bars in Zone 1 and decreases in Zone 3.

***Trends in the Alcohol Excise Tax Collections***

**Overview.** Another indicator of business activity related to alcohol consumption before and after the CIAA took effect is the total alcohol excise tax collections. Although these data are not specific to any particular type of alcohol consumed, they do provide an aggregate estimate of the total amount of alcohol consumed in the state, which provides additional information on the potential impact of the CIAA.

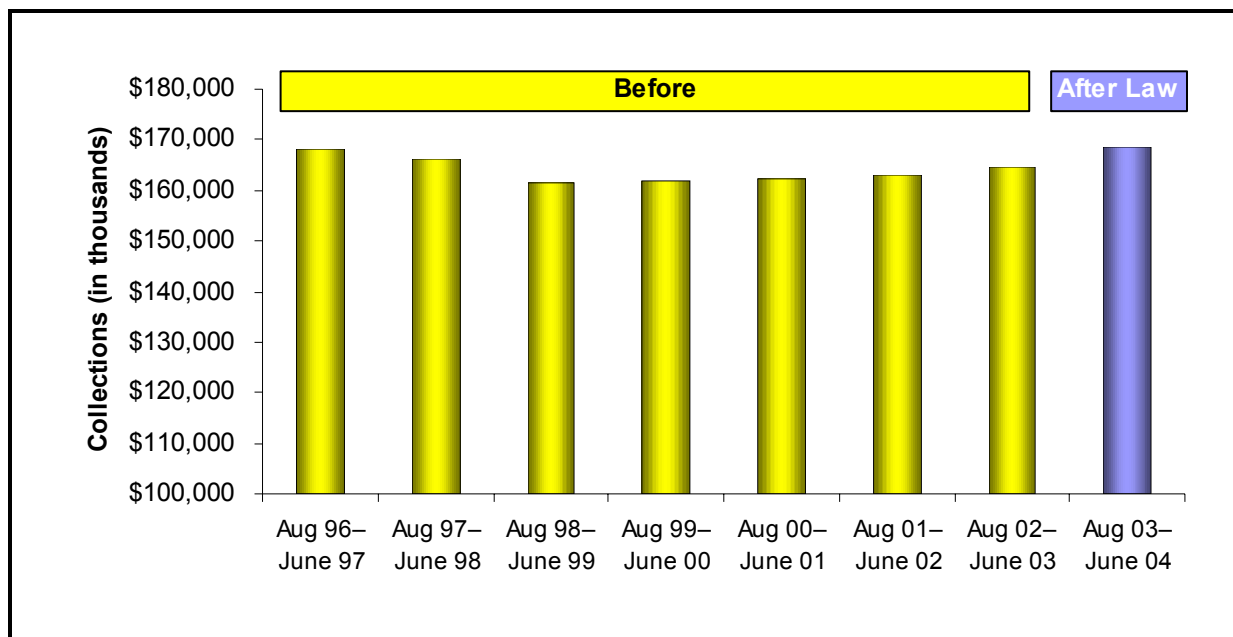
**Methods.** Alcoholic Beverage Tax data are from the New York State Department of Taxation and Finance reports on statewide monthly collections (<http://www.tax.state.ny.us/collections/>). The data shown are based on reported monthly collections of the Alcoholic Beverage Excise Tax. This tax is levied upon registered distributors and noncommercial importers of alcoholic beverages in New York. The collections reported do not differentiate whether the alcoholic beverages will be sold in bars, restaurants, or liquor stores. Note: The beer tax decreased 15.625 percent in January 1999, decreased 7.4 percent in April 2001, and decreased 12 percent in September 2003. Tax collections on beer represent between 21 percent and 28 percent of total alcoholic beverage tax collections. Data are reported for the total collections from August to the following June from 1996/1997 to 2003/2004 (after the CIAA took effect).

**Results.** As shown in ***Exhibit 6-30***, total alcohol excise tax collections increased in the August 2003 to June 2004 period after the law compared to the same period in the previous year before the law. The total increase was nearly \$3.7 million in additional alcohol excise tax collections (2.2 percent increase). Alcohol excise tax collections have been increasing in each of the 6 previous years for the months reported.

**Discussion.** The total alcohol excise tax collections increased in the period after the law, despite a decrease in the beer tax. Caveats to be noted with these data are that sales in bars and taverns represent a small fraction of total alcohol sales, and during the period when the CIAA took effect, other legislation was passed that lowered the legal blood limits for driving while under the influence of alcohol and allowed liquor stores to alter



**Exhibit 6-30. New York State Alcoholic Beverage Tax Collections: August to June 1996–2004**



Source: New York State Department of Taxation and Finance ([http://www.tax.state.ny.us/collections/monthly\\_tax\\_collections.htm](http://www.tax.state.ny.us/collections/monthly_tax_collections.htm)).

their hours to permit sales on Sundays. At this point, it is unclear how all of these factors are precisely related to total alcohol excise tax collections; however, the observed increasing trend does not provide evidence that the CIAA decreased alcohol sales.

### ***Employment Trends in the Hospitality Industry***

**Overview.** During the debate of the CIAA, an overriding concern was that the law would adversely harm the hospitality industry, namely restaurants and bars. These concerns were expressed by many in the hospitality industry, business owners, policy makers, and lay people. Here, we present data on the number of employees in restaurants and bars in New York over time and compare these data to New Jersey, which does not have a comprehensive CIA law, to provide data to determine if there have been decreases in employment after the law took effect in July 2003.

**Methods.** The data shown are from the Covered Employment and Wages (ES-202) data set ([http://www.labor.state.ny.us/labor\\_market/labor\\_market\\_info.html](http://www.labor.state.ny.us/labor_market/labor_market_info.html)). This is a census of all

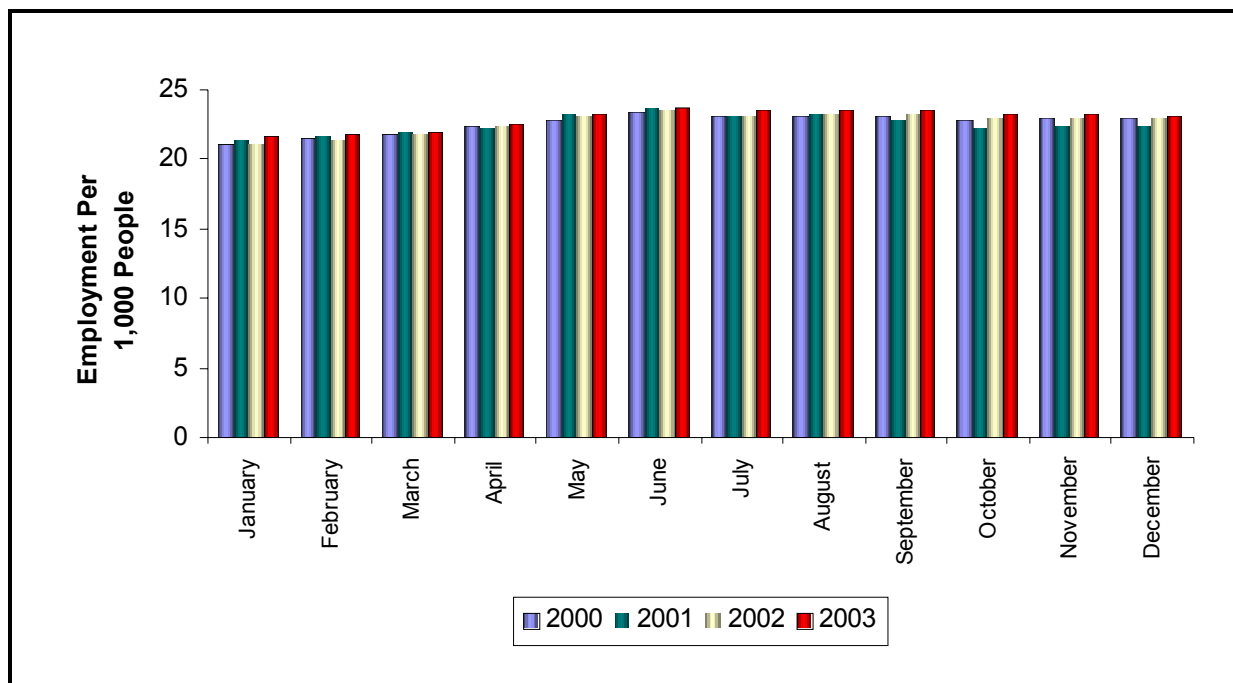
employers liable for Unemployment Insurance (97 to 99 percent of total nonagricultural employment). Data are reported quarterly about 6 months after the close of the quarter. The data reported are for the subsector “Food Services and Drinking Places” (NAICS code 722) and its component industry groups: “Full Service Restaurants” (NAICS code 7221) and “Drinking Places” (NAICS code 7224). Industries in the Food Services and Drinking Places subsector prepare meals, snacks, and beverages to customer order for immediate on-premises and off-premises consumption. There is a wide range of establishments in these industries. Some provide food and drink only, whereas others provide various combinations of seating space, waiter/waitress services, and incidental amenities, such as limited entertainment. The industries in the subsector are grouped based on the type and level of services provided. The industry groups are full-service restaurants; limited-service eating places; special food services, such as food service contractors, caterers, and mobile food services; and drinking places.

Comparable employment data were also obtained from the New Jersey Department of Labor and Workforce Development, which serves as an external comparison for New York. The employment data are shown “per capita” or number of people employed per 1,000 people in New York or New Jersey. Population estimates for New York and New Jersey are from the U.S. Census Bureau (<http://eire.census.gov/popest/data/states/tables/NST-EST2003-01.pdf>).

Monthly per capita data are reported from January 2000 to December 2003 for NAICS codes 722 (Food Services and Drinking Places), 7221 (Full Service Restaurants), and 7224 (Drinking Places) for New York, and comparison data for New Jersey are reported by month from April 2002 to December 2003. At this time, no formal statistical tests are reported, although future work will incorporate more data and account for underlying economic trends beyond population changes.

**Results.** *Exhibit 6-31* shows monthly per capita employment for NAICS code 722 (Food Services and Drinking Places) for New York. Per capita employment increased in each of the 5 months after the law took effect compared to the same month

**Exhibit 6-31. Food Services and Drinking Places Industry: Per Capita Employment in New York**

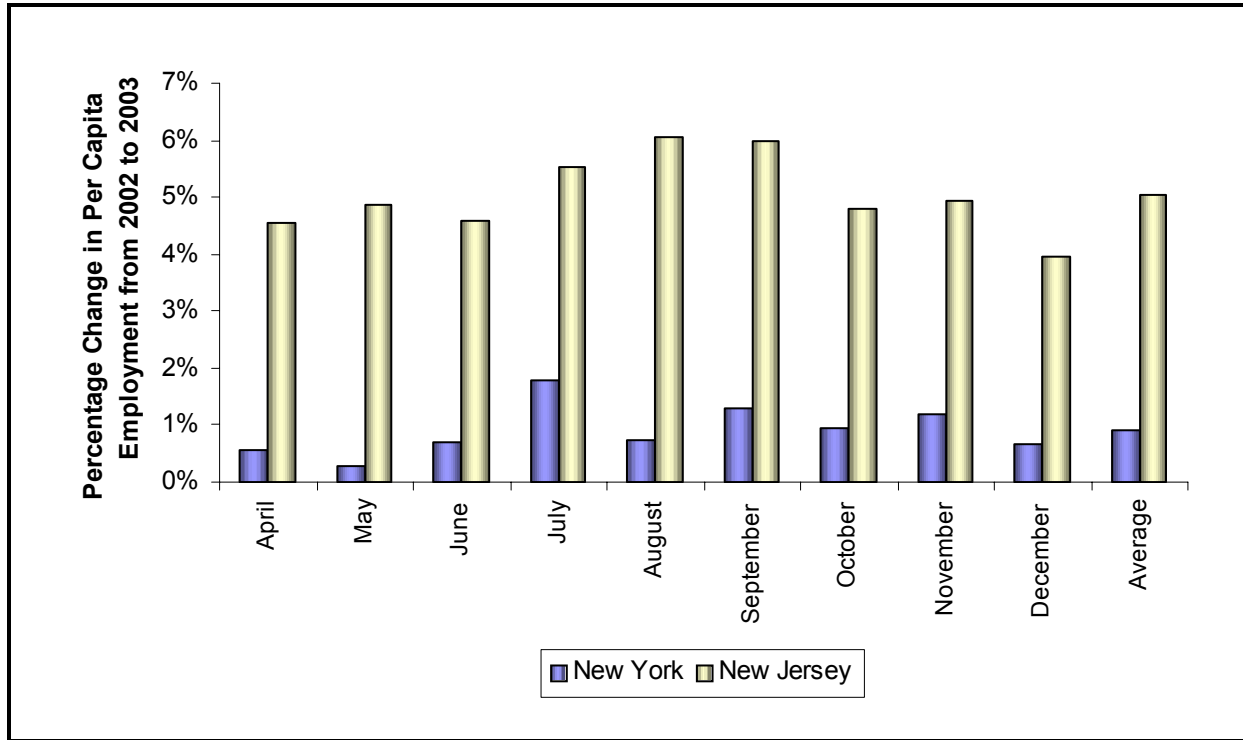


Source: New York State Department of Labor ES-202 data set for NAICS code 722, "Food Services and Drinking Places" and U.S. Census Bureau.

in the previous year. Overall, just over 2 percent of the population is employed in this industry sector. Employment levels are slightly higher in May to December compared to January to April, regardless of the year examined.

**Exhibit 6-32** shows the percentage change in per capita employment for NAICS code 722 (Food Services and Drinking Places) for New York and New Jersey from April 2002 to December 2003. Employment increased in New York in each month after the law. The growth rate was not as great as experienced in New Jersey, which also saw increases in employment both before and after July 2003.

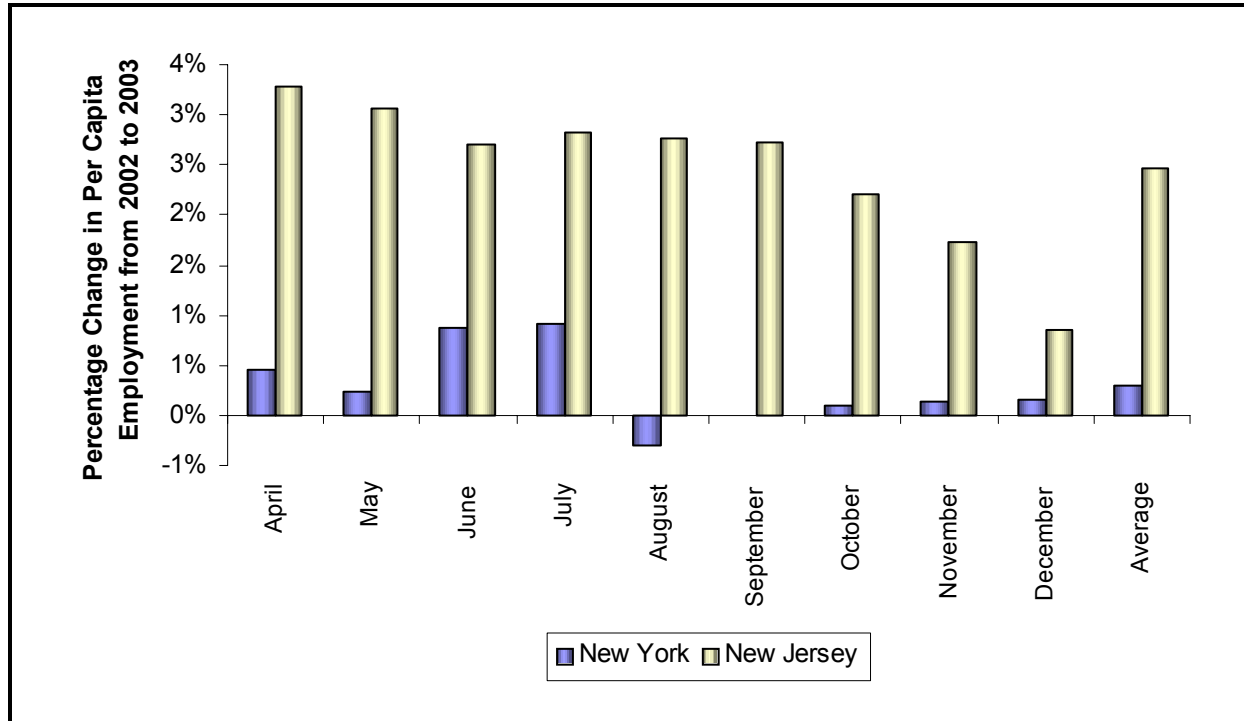
The Food Services and Drinking Places sector contains four subsectors (i.e., limited-service eating places, special food services, full service restaurants, and drinking places). We present data similar to Exhibit 6-32 for full service restaurants and drinking places. Data for full service restaurants are

**Exhibit 6-32. Food Services and Drinking Places Industry: Percentage Change in Per Capita Employment from 2002 to 2003**

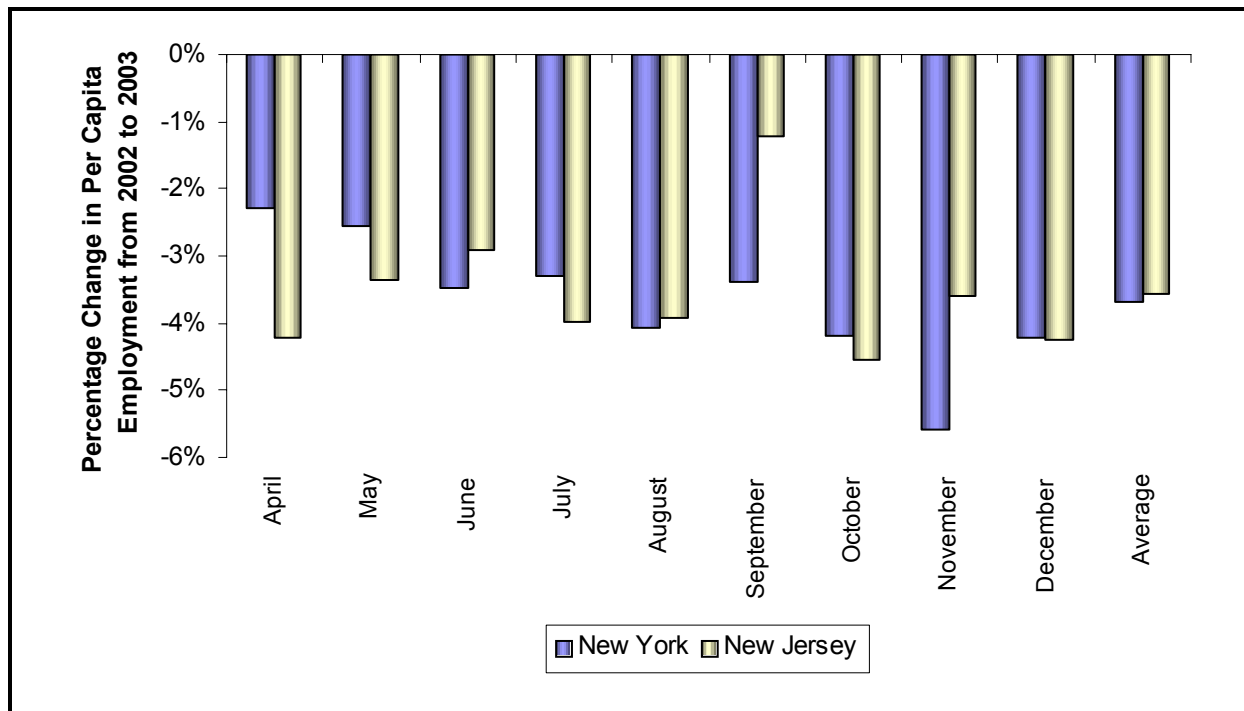
presented in **Exhibit 6-33**. Modest employment increases were observed in New York before and after the CIAA took effect in July 2003 compared to the same month in the previous year. The job growth rate in New York varied by no more than 1 percent over the period examined. Restaurant employment growth in New Jersey outpaced the growth rate experienced in New York both before and after July 2003.

Data for NAICS code 7224 (Drinking Places) are presented in **Exhibit 6-34**. Per capita employment decreased in every month from April 2003 to December 2003 compared to the same month in the previous year in both New York and New Jersey. The rate of decrease averaged across April to July in New York was 2.9 percent compared with a 3.6 percent decline in New Jersey. The average monthly decline from August to December was 4.3 percent in New York compared with a 3.5 percent drop in New Jersey.

**Exhibit 6-33. Full Service Restaurant Industry: Percentage Change in Per Capita Employment from 2002 to 2003**



**Exhibit 6-34. Drinking Places Industry: Percentage Change in Per Capita Employment from 2002 to 2003**



**Discussion.** Per capita employment in the food service and drinking sector have increased statewide after the CIAA took effect in July 2003, which does not provide support that the CIAA adversely impacted employment levels in the hospitality industry. Industry subsector data show increases in the full service restaurant industry in New York before and after the law. Per capita employment in drinking places has declined in New York following the law; however, the rate of decline is comparable to declines observed in neighboring New Jersey, which does not have a comprehensive CIAA. No dramatic changes in employment in New York were observed after the law took effect. These data suggest that employment in the drinking places industry is in a period of decline at the present time and observed decreases are not due to the CIAA.

Limitations of these data are that they present information on entire industries statewide. Data are not available for smaller industry segments or for individual businesses, which may mask trends in subsets of businesses. Nonetheless, the economic debate over the CIAA among policy makers was generally focused on the aggregate potential impact of the law. Future analyses will control for underlying economic trends and examine employment trends by geographic region. In addition, we will analyze aggregate taxable sales data for food services and drinking places to complement the employment data as this information becomes available.

#### **6.3.6 Summary**

The main findings from this section are as follows:

##### ***Exposure to Secondhand Smoke***

- Overall, trends in exposure to secondhand smoke in the home and in workplaces showed a steady decline from 1992 through 2002.
- Trends in exposure were similar between New York and the remaining United States.
- Despite implementation of the comprehensive CIAA, roughly 10 percent of workers continue to report observing smoke in their workplace.
- Overall, youth reported a surprisingly high level of exposure to secondhand smoke—more than twice the rate of adults.

### **Compliance with CIAA**

- **Observational Study of Restaurants, Bars, and Bowling Facilities**
  - Restaurants, bars, and bowling facilities quickly complied with New York's CIAA within 1 month of implementation.
  - Twelve months after implementation, compliance is quite high (92.9 percent of venues).
  - Compliance in bars, although dramatically improved, lags behind the other venues. Smoking is still occurring in about one of six bars across New York. Special consideration should be given by programs to target compliance in bars through education and enforcement.
- **Adult Tobacco Survey Findings**
  - Self-reported observations by adults in the ATS suggest that although smoking dropped markedly in all hospitality settings, the CIAA did not eliminate all smoking.
  - One year after implementation of the CIAA, 36 and 14 percent of adults who patronized bingo halls and bars, respectively, reported seeing smoking.
  - In addition to bars, greater enforcement of the CIAA in bingo halls is needed unless the observed levels of smoking reflect bingo halls that have received waivers to the CIAA (i.e., permit smoking).
- **Air Monitoring in Western New York State**
  - Measured particulate matter (PM2.5) dropped by 90 percent in 14 bars and restaurants in the study.
  - PM2.5 dropped by 77 percent in four other hospitality venues.
- **Study of Hospitality Workers**
  - The percentage of hospitality workers exposed to secondhand smoke declined by 75 percent, from 95 percent to 24 percent between the baseline study (conducted in the month prior to July 24, 2003) and a 3-month follow-up.
  - Total exposure to secondhand smoke in hospitality settings declined by 84 percent, from 13.5 to 2.2 hours.
  - Cotinine levels—a biological marker of secondhand smoke exposure—dropped from 4.52 ng/mL to 1.71

ng/mL or 62 percent between the baseline and 3-month follow-up.

- The presence of one or more sensory symptoms decreased by 38 percent, from 87 percent to 54 percent, and all individual symptoms declined significantly.
- The percentage of hospitality workers experiencing irritation of the eyes, nose, and throat declined by 62 percent, 34 percent, and 45 percent, respectively.
- There was a decline in coughing in the morning—dropping by 46 percent, from 30 percent to 16 percent.

### ***Attitudes Toward Secondhand Smoke and Related Policies***

- Attitudes Toward Policies Restricting Smoking in Public Places
  - Attitudes in support of restricting smoking in the workplace, restaurants, and bars increased steadily from 1992 to 2002.
  - Support for New York’s CIAA is growing over time and is considerably higher than predicted based on data from the CPS. Support for the law increased from 64 percent of adults saying they were in favor of the law in the period from June to September 2003 to 74 percent in the second quarter of 2004.
  - Support increased from 24 percent to 37 percent among smokers and from 74 percent to 82 percent among nonsmokers.
  - Similarly, support among hospitality workers is relatively high and remained stable in all waves of the survey. Six months after implementation, 68 percent supported the law.
- Attitudes about Secondhand Smoke
  - Overall, 82 percent, 92 percent, and 70 percent agree that exposure to secondhand smoke causes lung cancer, respiratory problems in children, and heart disease, respectively.
  - However, only 39 percent agree that exposure to secondhand smoke is a cause of sudden infant death syndrome, and less than one-third agree that it is a cause of colon cancer (when it is not).



- News Media Tracking
  - News media coverage of secondhand smoke-related issues was dominated by indoor smoking restrictions in February and March 2004 (the months of available data thus far).
  - In February, news media coverage was negatively skewed compared to public support for the law; however, coverage was more in line with public opinion in March.

### ***Home Restrictions on Smoking***

- The prevalence of households with smoke-free homes increased substantially from 1992 to 2004, from 37 percent to 69 percent.
- The prevalence of home rules banning smoking was similar for those living in New York and the remaining United States.
- Households with children under age 18 are more likely to have smoke-free homes than households with no children.

### ***Bar and Restaurant Patronage and Other Economic Indicators***

- Based on findings from the ATS, the majority of New Yorkers (overall, smokers, and nonsmokers) reported no change in patronage of bars and restaurants in response to the CIAA.
- On net, New Yorkers reported going to bars and restaurants more frequently after the law.
  - A small fraction of adults say they are frequenting bars (11.2 percent) and restaurants (7.8 percent) less often.
  - The percentage of New Yorkers who report going to bars and restaurants more often is 20.4 percent and 32.4 percent, respectively.
- Overall, from June 2003 to June 2004, an average of 5 percent of New Yorkers reported making at least one trip outside of New York for the purpose of patronizing a bar/restaurant that allows smoking.
  - The corresponding figures for smokers and nonsmokers was 10 percent and 4 percent, respectively.
  - However, 5 percent of smokers indicated making such trips prior to July 24, 2003, possibly in

response to local smoke-free ordinances or voluntary smoke-free policies.

- Overall, there have been no adverse impacts of the CIAA on employment, alcohol, excise tax revenues, or the number of bar licenses.

### 6.3.7 Conclusions and Next Steps

Findings from this section indicate that exposure to secondhand smoke has steadily declined in the home and in workplaces over the past decade. Based on attitudes about exposure to secondhand smoke, this change is welcomed by New Yorkers. From 1992 to 2002, New Yorkers' support for policies restricting smoking in public places, including bars and restaurants, steadily increased. This finding is bolstered by results that indicate a high level of public support for New York's CIAA—support considerably higher than what one might have predicted based on the 1992 to 2002 trends.

Our findings indicate that although only 10 percent of workers report exposure to secondhand smoke, this level is higher than might be expected considering the comprehensive CIAA that prohibits smoking in virtually all workplaces. Further research is needed to explore where and why this exposure continues. We also found that youth reported higher rates of exposure to secondhand smoke, and we recommend examining the 2004 YTS data to understand the possible effects of the CIAA on youth exposure to secondhand smoke. Our research also indicates that exposure in homes and cars is now the primary source of exposure to secondhand smoke. Thus, programmatic efforts should increasingly focus on educating New Yorkers about the dangers of secondhand smoke to promote voluntary restrictions on smoking in homes and cars.

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*The comprehensive data presented on the impact of the CIAA across a wide range of studies indicate that 1 year after implementation of the law, it has been a success.*

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The comprehensive data presented on the impact of the CIAA across a wide range of studies indicate that 1 year after implementation of the law, it has been a success. Compliance with the law was rapid and is now nearly complete, with the exception of bars, which lag behind other hospitality venues. Support for the law is high and steadily increasing among New Yorkers. The law has resulted in lower exposure to secondhand smoke among hospitality workers, and this lower exposure is beginning to positively impact their health. Finally, self-

reported patronage of bars and restaurants suggests that there may have been a slight positive benefit to businesses as a result of the law. Results across the various studies triangulate these findings, leading to a consistent pattern of positive effects.

Future evaluation efforts germane to the CIAA should focus on continued monitoring of compliance, especially in bars where compliance lags behind other venues. Further research is also needed to more fully understand the impact of the CIAA on businesses that may be potentially affected (positively or negatively), such as bars and restaurants. Finally, a closer examination of the potential impact of the law on health outcomes is warranted.

Because exposure to secondhand smoke is now greatest in private homes and cars, research should explore the factors associated with voluntary restrictions on smoking in these settings to better understand how the program can engage in activities that promote these restrictions. Countermarketing efforts are one such strategy to promote these restrictions as well as to increase New Yorkers' understanding of the health risks associated with exposure to secondhand smoke. Our data suggest that New Yorkers do not fully understand all of the risks associated with exposure to secondhand smoke, especially as they relate to heart disease and sudden infant death syndrome.

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## **6.4 GOAL 2: DECREASE THE SOCIAL ACCEPTABILITY OF TOBACCO USE**

### **6.4.1 Overview**

Goal 2 of the NYTCP is to decrease the social acceptability of tobacco use in New York. To achieve this goal, the program has identified four objectives:

- Increase antitobacco attitudes among youth and adults.
- Reduce tobacco sponsorship of sporting, cultural, entertainment, art, and other events in the community, region, and state.

- Reduce tobacco promotions occurring in sporting, cultural, entertainment, art, and other events in the community, region, and state.
- Reduce the number of retailers that post point-of-purchase tobacco advertising.

In the draft NYTCP strategic plan, there are a number of activities that the program plans to conduct to make progress toward this goal. These include implementing effective marketing campaigns and public relations strategies to counter tobacco industry promotional activities and to educate consumers about their tobacco products (e.g., low tar, additives). The Community Partners will engage in media advocacy; provide alternatives to tobacco industry sponsorship in communities; raise awareness of the promotion of tobacco products in movies, art, and entertainment; and assist RTI in measuring retail advertising and promotions in the retail environment.

Because many of these activities have not yet been fully implemented, the data presented in this section primarily serve as a baseline against which to monitor progress. Currently, the program has identified only a few performance indicators for this goal, so we developed a number of reasonable indicators for both youth and adults. These indicators are organized around the following constructs:

- Attitudes toward tobacco
- Awareness of antitobacco media messages
- Awareness of pro-tobacco advertising, promotions, and sponsorships

The analyses in this section are exclusively descriptive and are intended to inform the current state of New Yorkers' attitudes and exposure to pro- and antitobacco messages through various media outlets. The data we summarize come from the ATS and YTS.

#### **6.4.2 Tobacco Knowledge, Attitudes, and Beliefs**

Both the ATS and the YTS ask respondents about a number of tobacco-related attitudes and beliefs. In the ATS, these questions pertain to the perceptions of the health risks of smoking, beliefs about tar and nicotine, and attitudes about

smoking in the movies. For youth, the attitudes have to do with social norms, social imagery, and attitudes toward the tobacco industry. In the summary below, we present data on adults, followed by youth.

### ***Adults' Tobacco Knowledge, Attitudes, and Beliefs***

**Overview.** The ATS, which was implemented in June 2003, contains a number of questions that inform the extent to which New Yorkers are knowledgeable about the health risks of smoking and various tobacco products. Monitoring smokers' and nonsmokers' knowledge, attitudes, and beliefs can both measure progress made by the program in influencing these measures and inform the program of knowledge deficits about the health risks of tobacco.

**Methods.** In this section, we present weighted summary statistics of the following specific attitude and belief questions from the ATS:

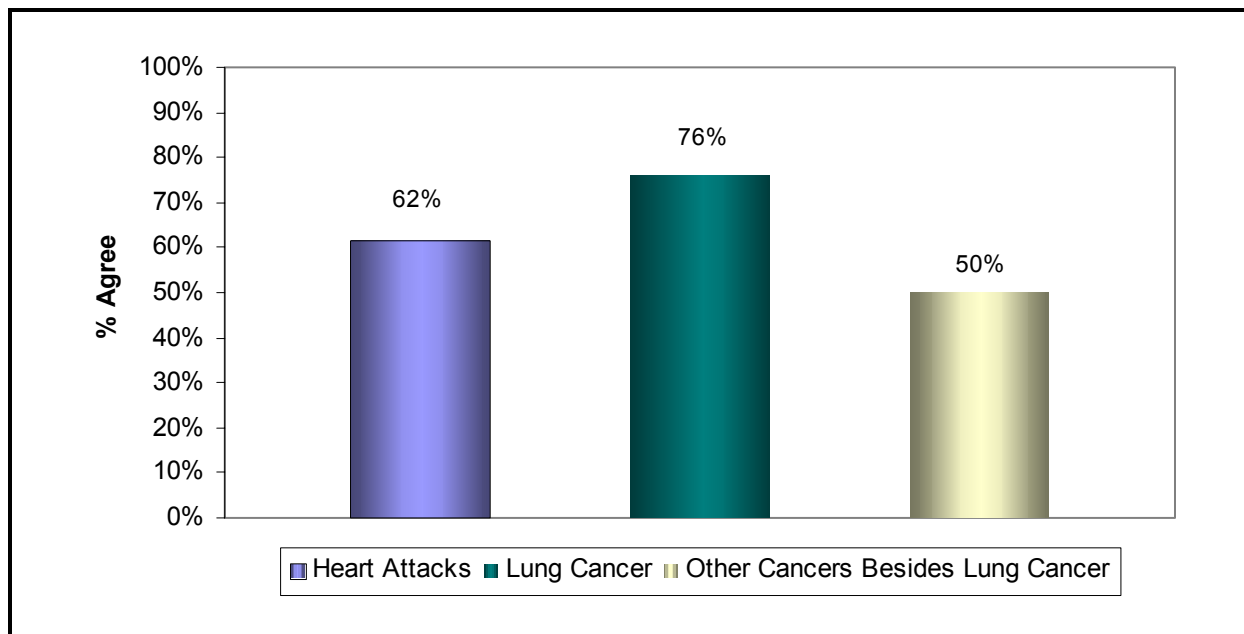
- Do you think your risk of [lung cancer/heart disease/other cancers besides lung cancer] is higher, lower, or about the same as other people who are your age and don't smoke?
- Are nicotine patches more likely, about as likely, or less likely to cause someone to become addicted as regular cigarettes?
- Please tell me if you strongly agree, agree, disagree, or strongly disagree with the following statements:
  - If a person has smoked a pack of cigarettes a day for more than 20 years, there is little health benefit to quitting smoking.
  - High tar cigarettes that are sold these days are at least twice as likely to cause illness as ones that are low in tar.
  - If you have to smoke, you are probably better off smoking a light cigarette.
  - Nicotine is a cause of cancer.
  - Movies rated G, PG, and PG-13 should not show actors smoking.
  - Actors smoking in the movies does not encourage smoking among teens.

- Movies with a lot of smoking in them should be rated R.

All of the ATS data presented in this section are based on data pooled across the four quarterly surveys conducted from June 2003 through June 2004. There were no statistically significant trends across quarters. We present summary statistics overall and by smoking status (when applicable).

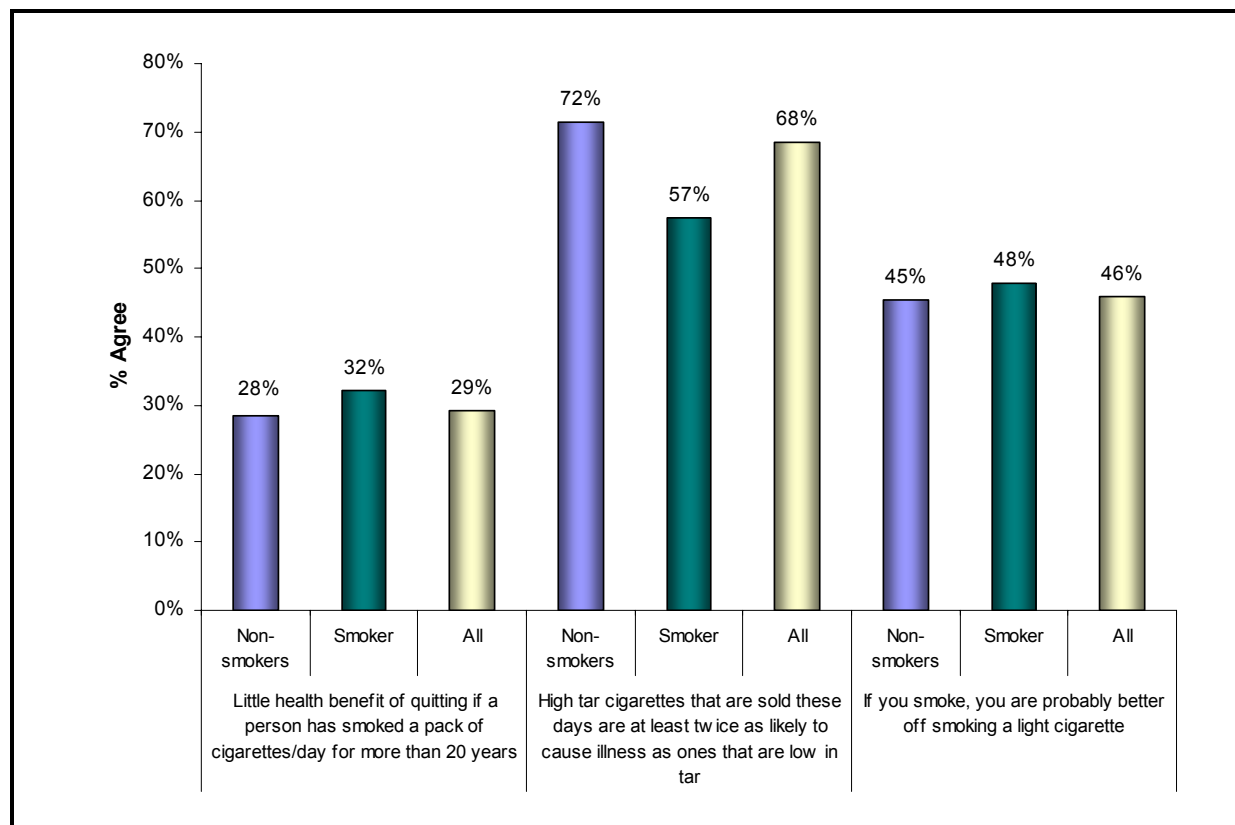
**Results.** *Exhibit 6-35* presents smokers' perceptions of the risks of smoking (this question was not asked of nonsmokers). More than three-quarters of New York smokers agree that smokers' risk of lung cancer is higher than for nonsmokers, but the analogous statistics for other cancers is only 50 percent. In addition, 62 percent agree that smokers' risk of heart disease is higher than that of nonsmokers.

**Exhibit 6-35. Percentage of Smokers Who Acknowledge the Health Risks of Smoking, ATS 2003–2004**



Turning to beliefs about the benefits of quitting and the tar content of cigarettes, we find that 29 percent of New Yorkers agree that there is little benefit to quitting for smokers who have smoked a pack a day for 20 years, when in fact there are benefits to quitting. Agreement with this question varies little by smoking status (*Exhibit 6-36*). More than two-thirds (68

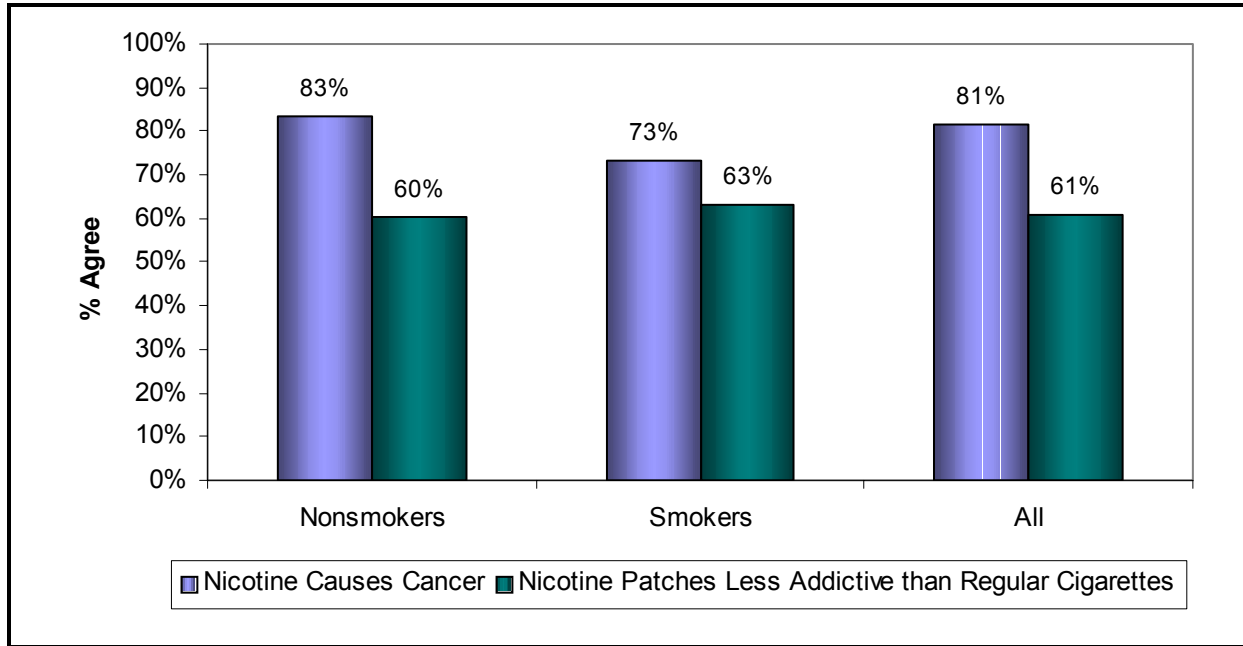
**Exhibit 6-36. Percentage of Adults Who Agree with Various Statements about the Benefits of Cessation and Low Tar Cigarettes by Smoking Status, ATS 2003–2004**



percent) of adults agree that high tar cigarettes, are at least twice as likely to cause illness as low tar cigarettes when recent evidence indicates little benefit to low tar cigarettes.

The level of agreement is lower among smokers (57 percent) than nonsmokers (72 percent), and the difference between these groups is statistically significant. In addition, nearly half of New Yorkers see a benefit to smoking light cigarettes, and there are no meaningful differences by smoking status.

**Exhibit 6-37** suggests widespread misperceptions about the dangers of nicotine among all New Yorkers, with four of five agreeing incorrectly that nicotine causes cancer. Smokers are only slightly better informed (73 percent) than nonsmokers (83 percent), and the difference between smokers and nonsmokers is statistically significant. Approximately 60

**Exhibit 6-37. Percentage of Adults Who Agree with Various Statements about the Risks of Nicotine and Addictiveness of Nicotine Patches by Smoking Status, ATS 2003–2004**

percent of smokers and nonsmokers agree that nicotine patches are less likely than regular cigarettes to cause someone to become addicted.

Finally, we report social norms about smoking in the movies.

**Exhibit 6-38** indicates that nearly 70 percent of New Yorkers agree that smoking should not be allowed in movies rated G, PG, or PG-13, whereas not quite half agree that movies with a lot of smoking should be rated R. Nearly two-thirds of all adults agree that smoking in the movies encourages youth smoking. Smokers are consistently less likely than nonsmokers to agree (disagree) with these statements.

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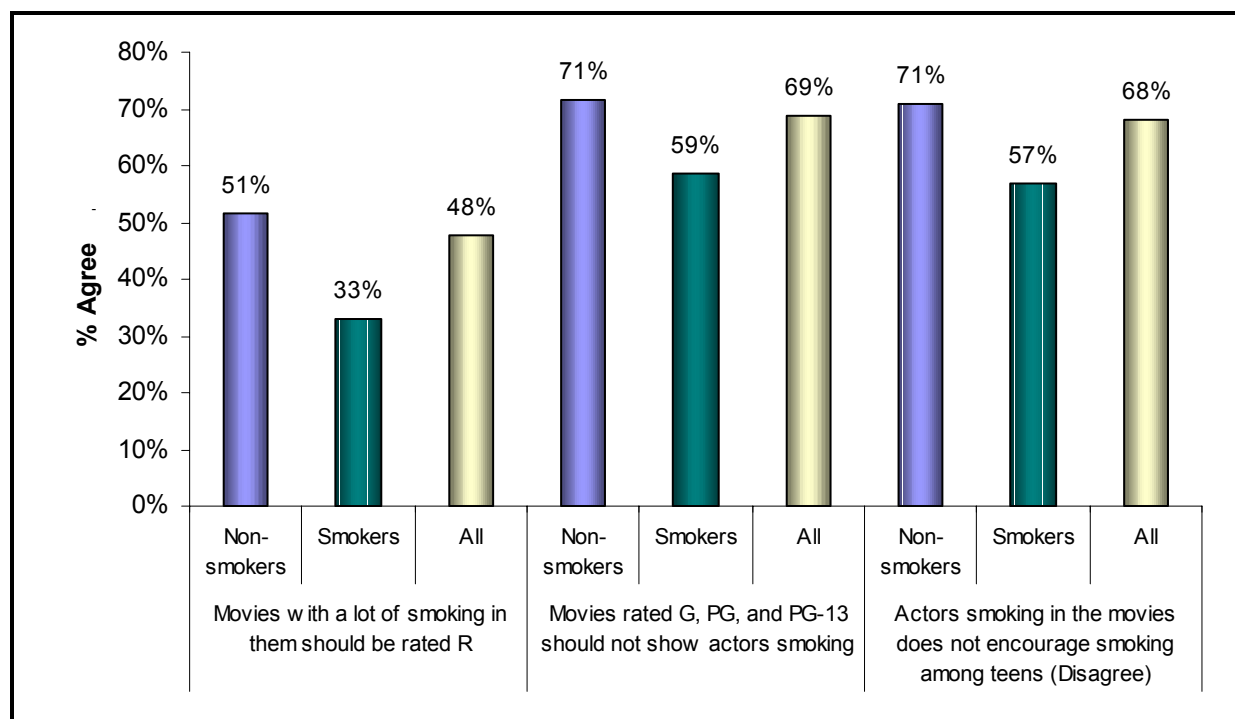
*The attitudes and beliefs summarized in this section suggest that there is a need to further educate New Yorkers about a range of issues, including the health risks of smoking, the benefits of cessation, and the lack of benefit from low tar cigarettes.*

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**Discussion.** The attitudes and beliefs summarized in this section suggest that there is a need to further educate New Yorkers about a range of issues, including the health risks of smoking, the benefits of cessation, and the lack of benefit from low tar cigarettes. These data suggest that a high proportion of smokers and nonsmokers have misperceptions about the benefits of low tar cigarettes. In addition, New Yorkers overstate the dangers of nicotine as a cause of cancer.



**Exhibit 6-38. Percentage of Adults Who Agree with Various Statements about Smoking in the Movies**



Finally, the questions about smoking in the movies indicate that a high proportion of New Yorkers agree that smoking in the movies encourages smoking among youth and that smoking should not occur in movies rated less than R. However, significantly fewer adults agree that movies should be rated R if they contain a lot of smoking. These views are consistent with messages that have been disseminated through the NYTCP smoke-free movie initiative.

### ***Youth's Tobacco Knowledge, Attitudes, and Beliefs***

**Overview.** The YTS, which was first administered in 2000 and then again in 2002, contains a number of knowledge, attitude, and belief questions. The YTS has questions pertaining to social norms, social imagery, attitudes toward the tobacco industry, and the health risks of smoking. However, unlike the ATS, there is only one question on the health risks of smoking. This shift in focus is appropriate as social influences are known to have a greater influence on youth smoking than knowledge of health risks (now well known among youth).

**Methods.** In this section, we present weighted summary statistics for 2000 and 2002 of the following attitudinal questions (when available in both years) from the YTS, starting with the question stem “do you think. . .”:

- Young people who smoke have more friends?
- Not smoking is a way to express your independence?
- Smoking cigarettes makes young people look cool or fit in?
- It is safe to smoke for only a year or two as long as you quit after that?
- Cigarette companies target teens to replace smokers who die?
- Cigarette companies deny that cigarettes cause cancer or other harmful diseases?
- Cigarette companies get too much blame for young people smoking?

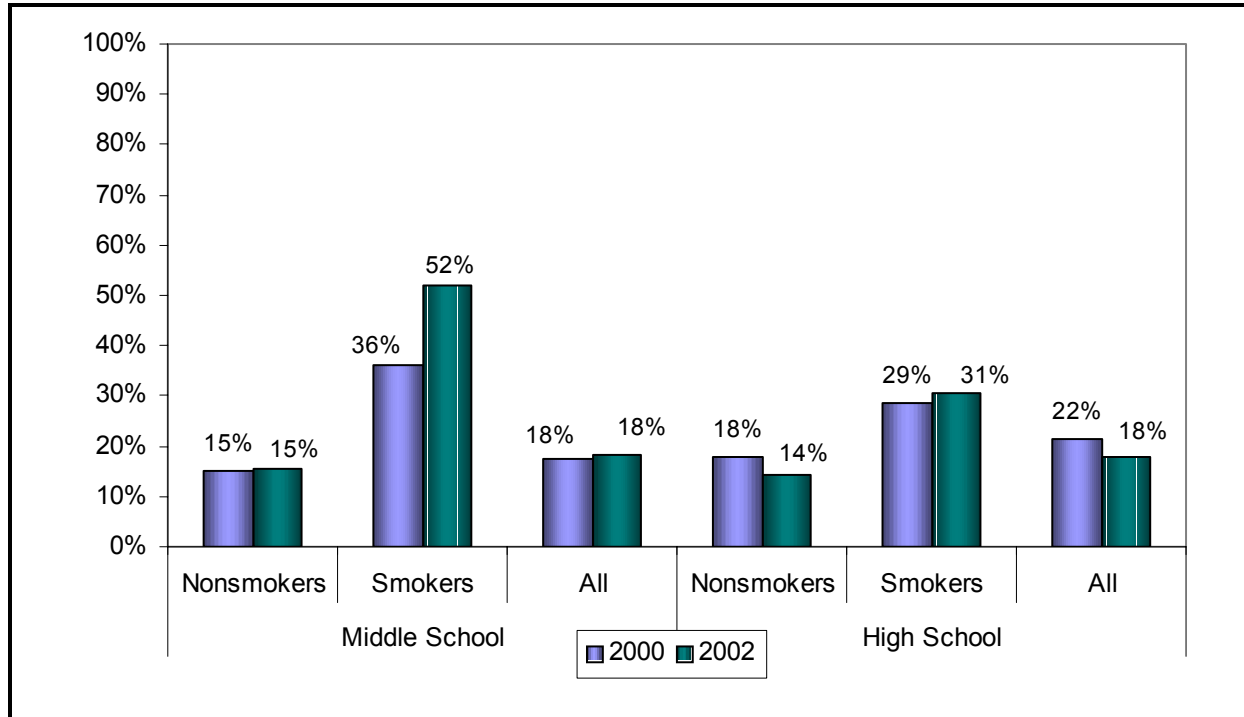
We summarize youth’s attitudes overall and by school level and smoking status.

**Results.** Among middle school students, significantly more smokers (52 percent) than nonsmokers (15 percent) thought that smokers have more friends (**Exhibit 6-39**). A similar pattern was true among high school students, where 31 percent of smokers and 14 percent of nonsmokers agreed with this statement. Among middle school smokers, the percentage increased significantly from 2000 to 2002.

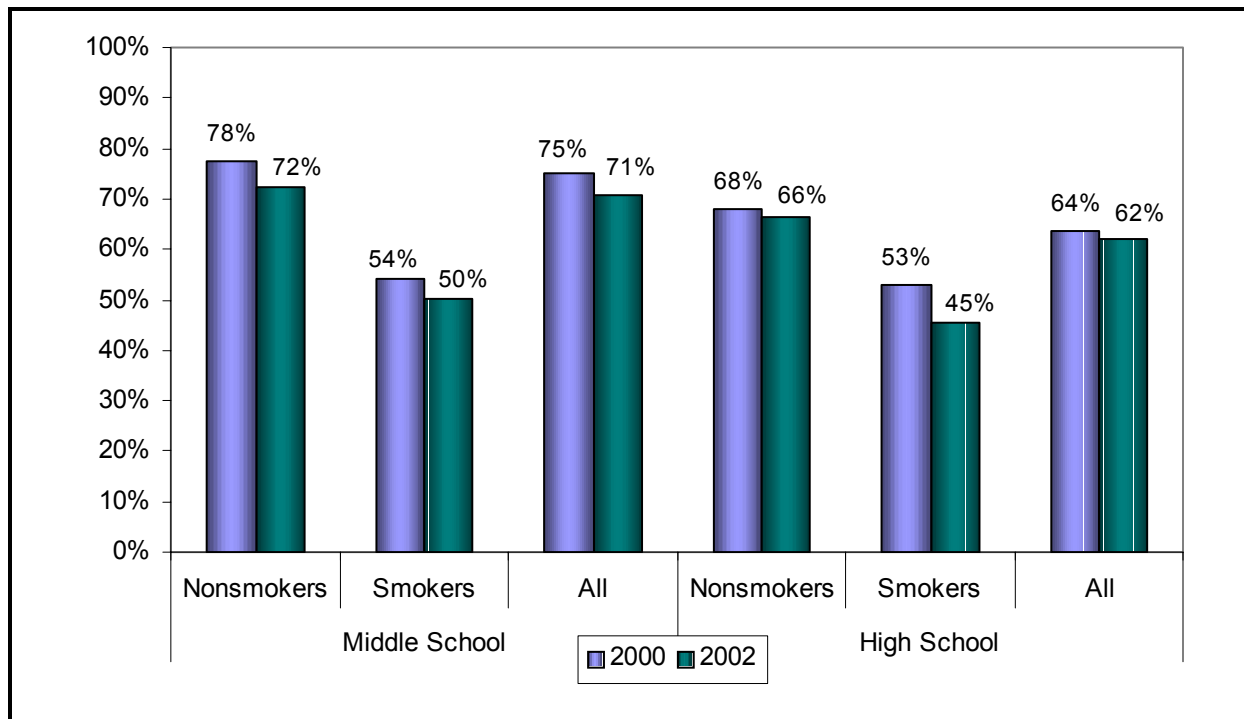
**Exhibit 6-40** presents the prevalence of youth who think that not smoking is a way to express their independence. The level of agreement with this statement is roughly 12 and 21 percentage points higher for nonsmokers than smokers in middle school and high school respectively in 2002.

In 2002, more than 85 percent of middle and high school students thought that smoking does not make people look cool or fit in (**Exhibit 6-41**). Smokers in both groups are also significantly less likely to agree with this statement than nonsmokers in the same school level.

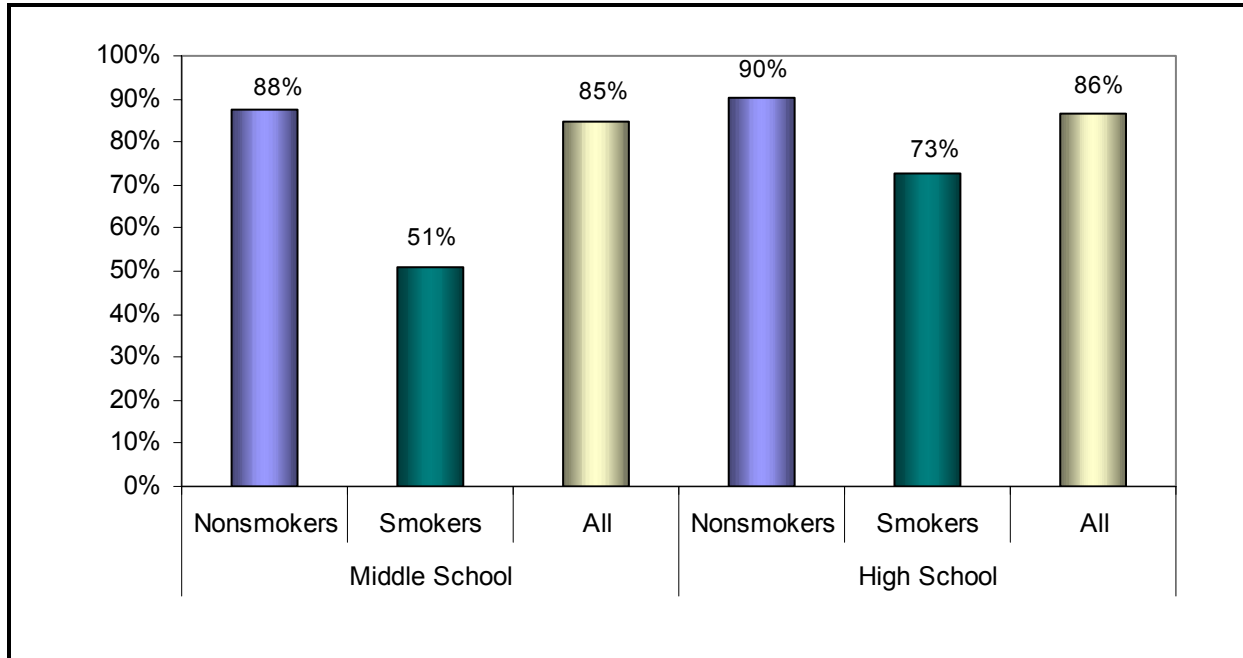
**Exhibit 6-39. Percentage of Youth Who Think That Young People Who Smoke Have More Friends, YTS 2000–2002**



**Exhibit 6-40. Percentage of Youth Who Think That Not Smoking is a Way to Express Their Independence, YTS 2000–2002**



**Exhibit 6-41. Percentage of Youth Who Think That Smoking Cigarettes Does Not Make Young People Look Cool or Fit In, YTS 2002**

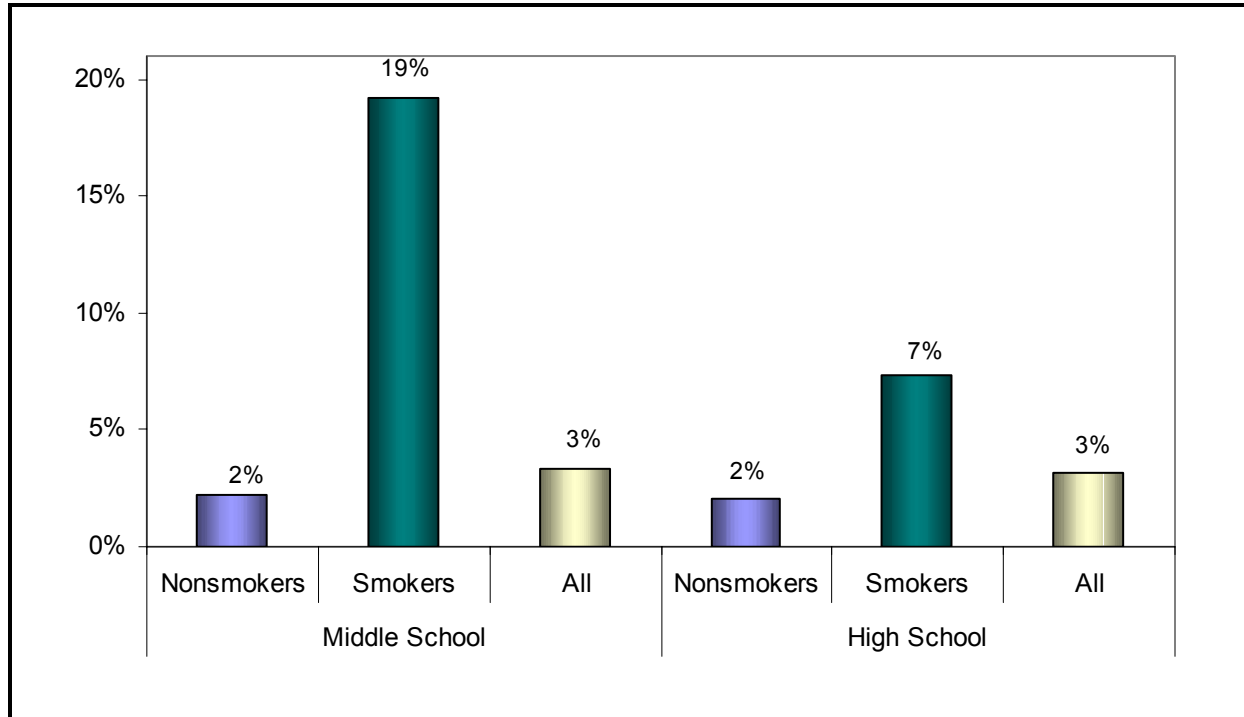


Only 3 percent of middle and high school students think that it is safe to smoke for only a year or two as long as you quit after that (**Exhibit 6-42**). Significantly more smokers than nonsmokers hold this view among both middle and high school students.

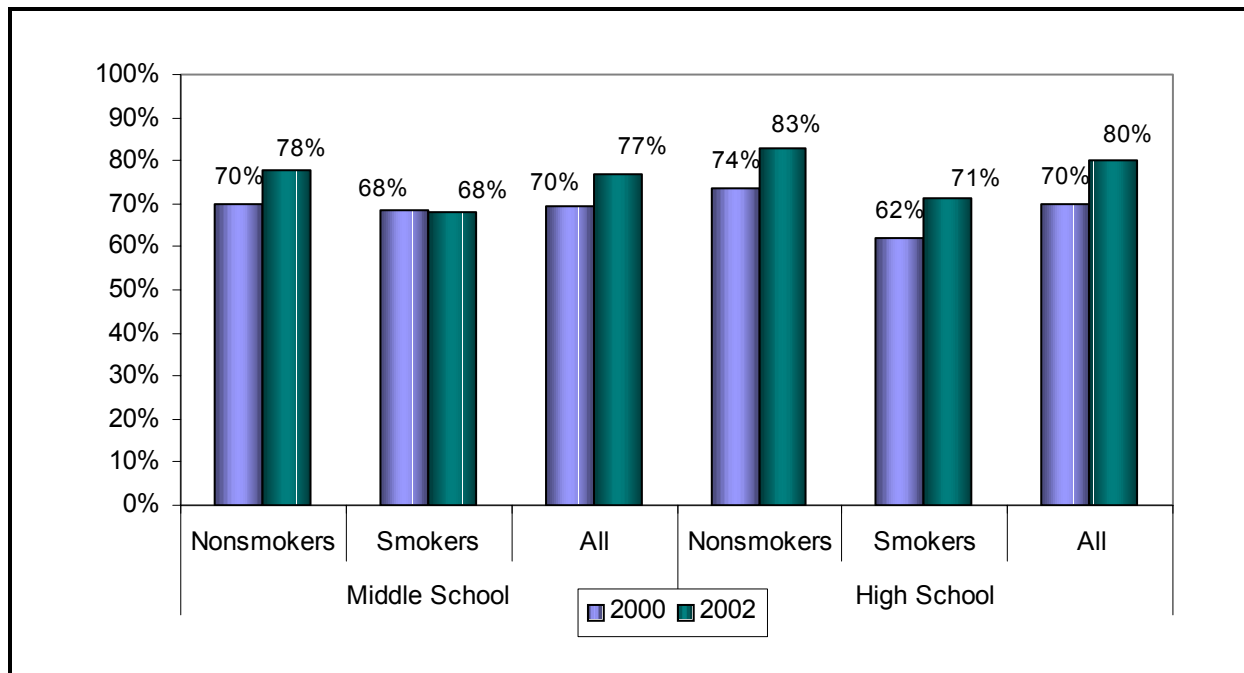
At least 6 out of 10 smokers and at least 7 out of 10 nonsmokers think that cigarette companies target teens to replace smokers who die (**Exhibit 6-43**). These differences are not significant in middle school but are in high school. In addition, significantly more nonsmokers in both middle and high school held this view in 2002 than in 2000, and overall significantly more students were of this opinion in 2002 than in 2000. These attitudes are consistent with the messages promoted by the NYTCP Reality Check Youth Action Program.

In **Exhibit 6-44**, at least half of all smokers and approximately two-thirds of all nonsmokers in 2002 believe that cigarette companies deny that cigarettes cause cancer or other harmful diseases. This difference is significant among high school students.

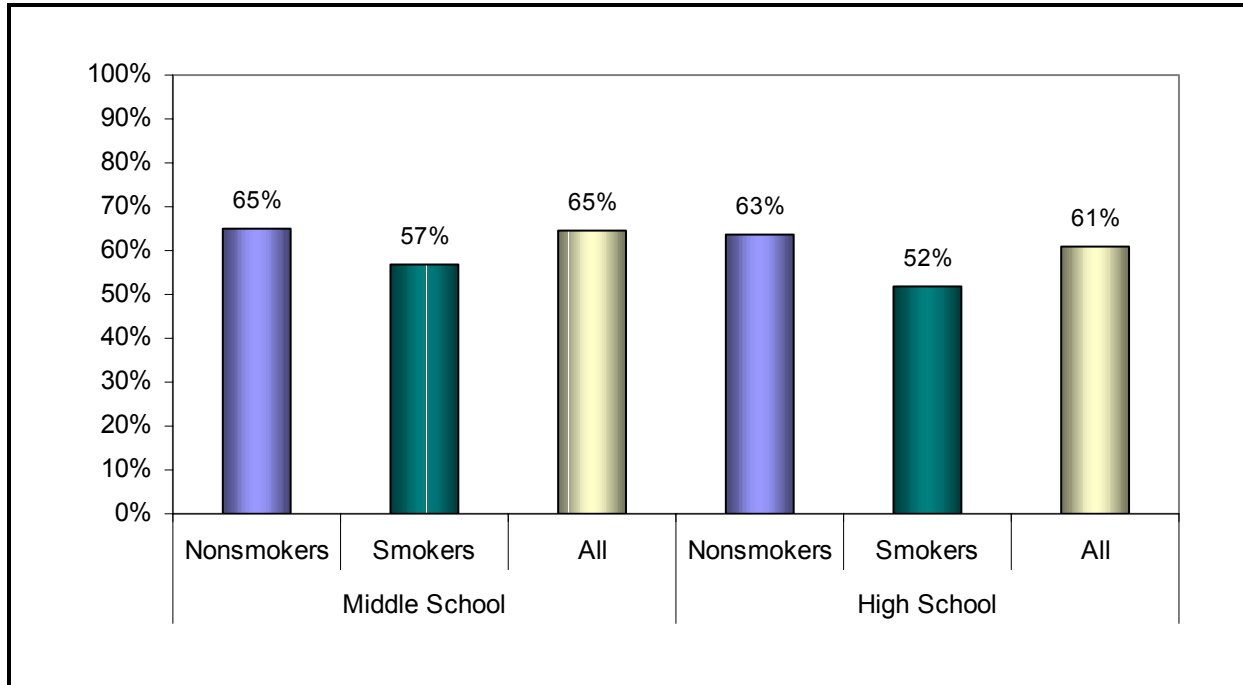
**Exhibit 6-42. Percentage of Youth Who Think It Is Safe to Smoke for Only a Year or Two as Long as You Quit After That, YTS 2002**



**Exhibit 6-43. Percentage of Youth Who Think That Cigarette Companies Target Teens to Replace Smokers Who Die, YTS 2000–2002**



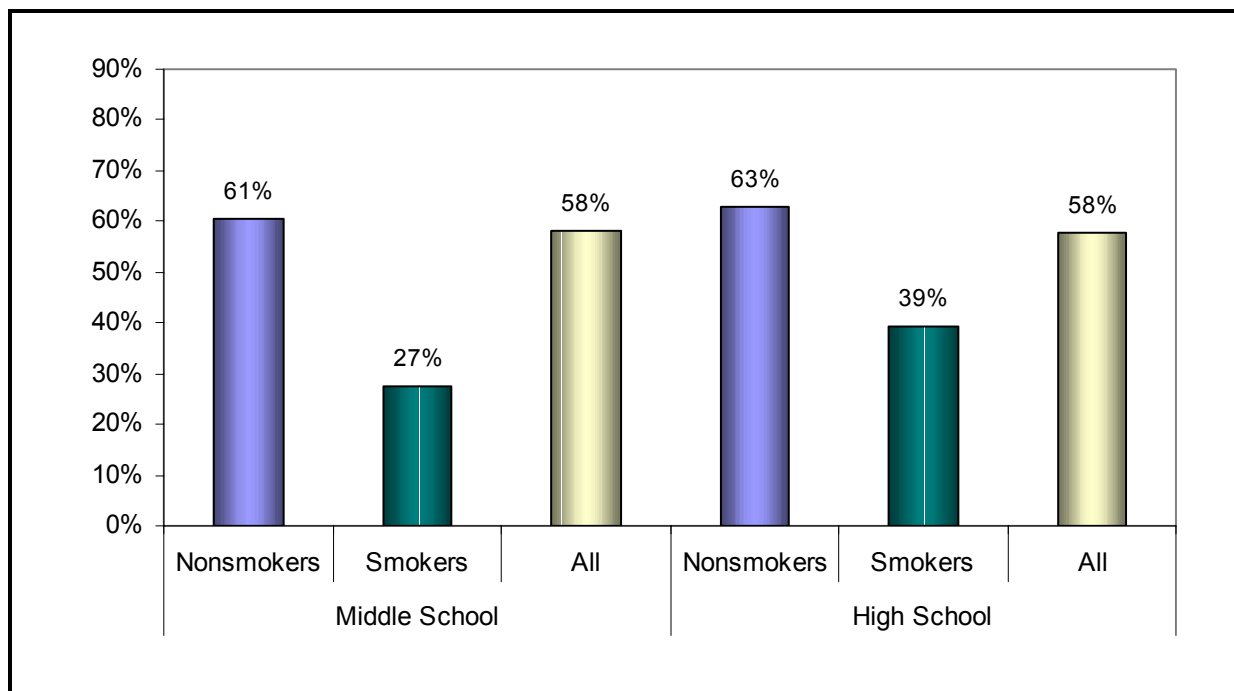
**Exhibit 6-44. Percentage of Youth Who Think That Cigarette Companies Deny that Cigarettes Cause Cancer or Other Harmful Diseases, YTS 2002**



Almost two-thirds of all nonsmokers do not think that cigarette companies get too much blame for young people smoking (**Exhibit 6-45**). Among high school students, the percentages for smokers (39 percent) are significantly lower than for nonsmokers (63 percent).

**Discussion.** Knowledge, attitude, and belief questions can serve at least a dual purpose for a tobacco control program. If they are designed to be consistent with key media campaign or other program-related messages, they can indicate intermediate progress toward longer-term program goals, such as increased cessation or decreased smoking initiation. In the case of the NYTCP's Smokefree Movie initiative, current measures on the ATS and YTS will allow us to monitor attitude changes in response to program activities designed to denormalize and deglamorize tobacco use among youth and adults, increase awareness of tobacco industry marketing practices, and increase support for policy changes such as "R" ratings for movies that contain images of smoking.

**Exhibit 6-45. Percentage of Youth Who Do Not Think That Cigarette Companies Get Too Much Blame for Young People Smoking, YTS 2002**



Process data collection activities will facilitate the collection of programmatic action, such as press conferences, staged and infused events, and other efforts to increase awareness of particular issues and change community norms regarding tobacco. With regard to statewide media—probably the most effective educational and community norm change strategy—the absence of a long-term media campaign plan that is coordinated with other components of the NYTCP makes it difficult to create attitudinal questions that are in-line with campaign messages and thus provide a measure of program progress toward goal achievement. Such measures will need to be developed for state and local media campaigns, media advocacy, and effort to earn media exposure.

The attitudes captured by the ATS indicate that there is relatively low acceptance among smokers of the dangers of smoking—lung cancer, heart disease, and other cancers. We also found that smokers and nonsmokers alike have misconceptions about the benefits of light or low tar cigarettes and overstate the dangers of nicotine as a cause of cancer.

Finally, the ATS asks respondents about their attitudes about smoking in the movies. Nearly half of New Yorkers agree that movies with a lot of smoking should be rated R, and approximately 70 percent believe that movies rated less than R should not have smoking in them.

Turning to youth, only 3 percent of youth fail to recognize the dangers of smoking, but 15 to 18 percent think that smoking is socially desirable. In addition, approximately 60 percent think that cigarette companies are *not* getting too much blame, and nearly two-thirds believe that cigarette companies have denied that cigarettes cause cancer and other harmful diseases. Two of the three attitudes that were measured in 2000 and 2002 had statistically significant increases in antitobacco attitudes. These attitudes were consistent with messages promoted by the American Legacy Foundation's (Legacy's) "truth" campaign and New York's Reality Check youth program. In addition, all of these attitudes are correlated with smoking status, suggesting that changes in these attitudes could bring about changes in smoking behavior.

#### **6.4.3 Awareness of Antitobacco Media Messages**

In this section, we report on New Yorkers' awareness of various antitobacco-related advertisements among youth and adults. In the ATS, adults are asked about a variety of topics ranging from advertisements for nicotine patches or gum to the dangers of smoking during pregnancy. In the YTS, the questions focus on general awareness of antismoking advertisements on television, radio, and magazines or newspapers.

##### ***Adults' Awareness of Antitobacco Media Messages***

**Overview.** The ATS contains both general and specific questions about New Yorkers' awareness of messages in the media. The data presented in this section serve as a baseline against which future results can be compared to measure the progress of the program in bringing attention to various topics.

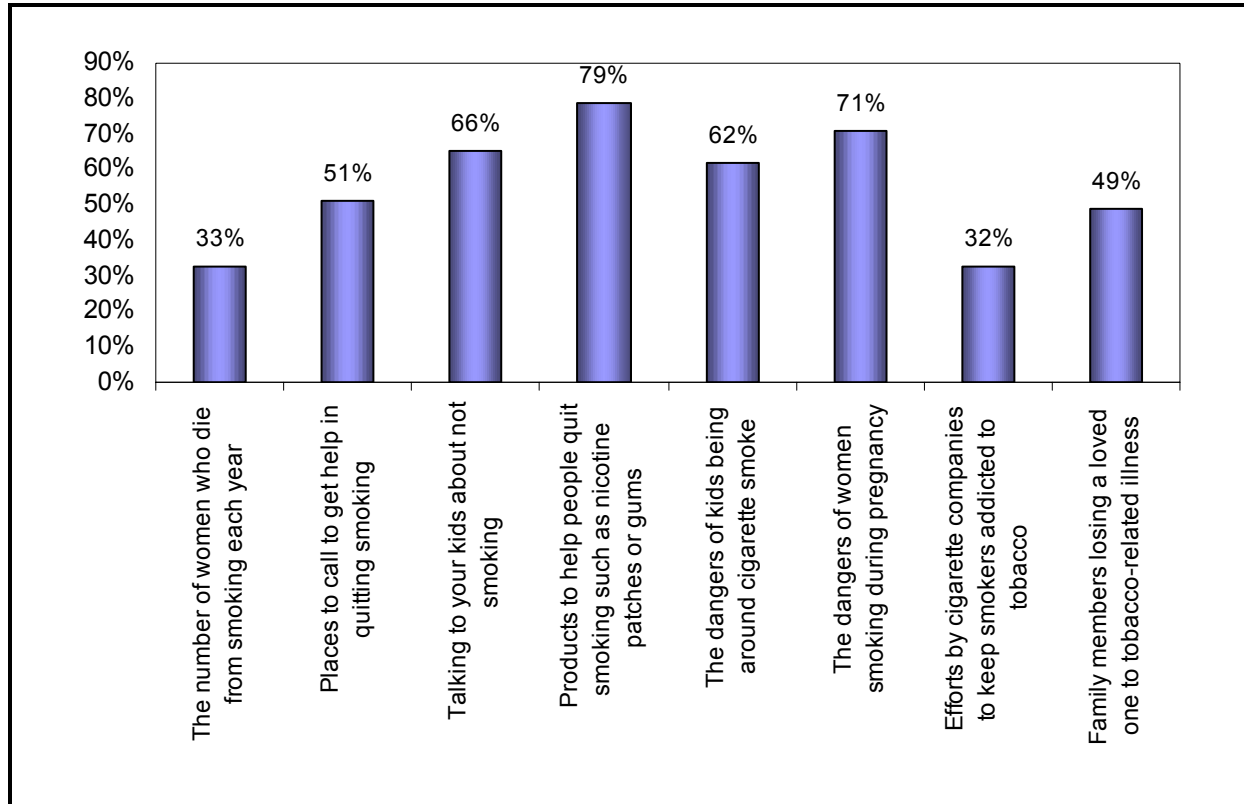
**Methods.** The general awareness questions in the ATS ask adults to indicate whether they have seen or heard messages in the past 30 days on a wide range of topics. The specific awareness questions ask adults to indicate whether they recall seeing a specific advertisement sponsored by the NYTCP or one



of its funded partners. Respondents are read a brief description of the advertisement and if they indicate that they have seen it, they are asked to provide additional details about what happened in the advertisement to confirm their awareness. Those who indicate that they have seen the advertisement are asked if it “said something important to them” and if they talked to anyone about not smoking after seeing the advertisement.

The data presented in this section on the general awareness questions are based on data pooled across the four quarterly surveys conducted from June 2003 to June 2004. There were no statistically significant trends across quarters. Where there were meaningful differences, we present summary statistics by smoking status. For the questions on specific awareness, we present data from the most recent quarter of data—the second quarter of 2004. During this quarter, the NYTCP aired eight different ads, and the ATS asks questions about all eight. For simplicity, we present a “global” measure of awareness that is based on recalling at least one advertisement. In addition, we present average reactions (i.e., said something important, talked to others) to advertisements that were seen.

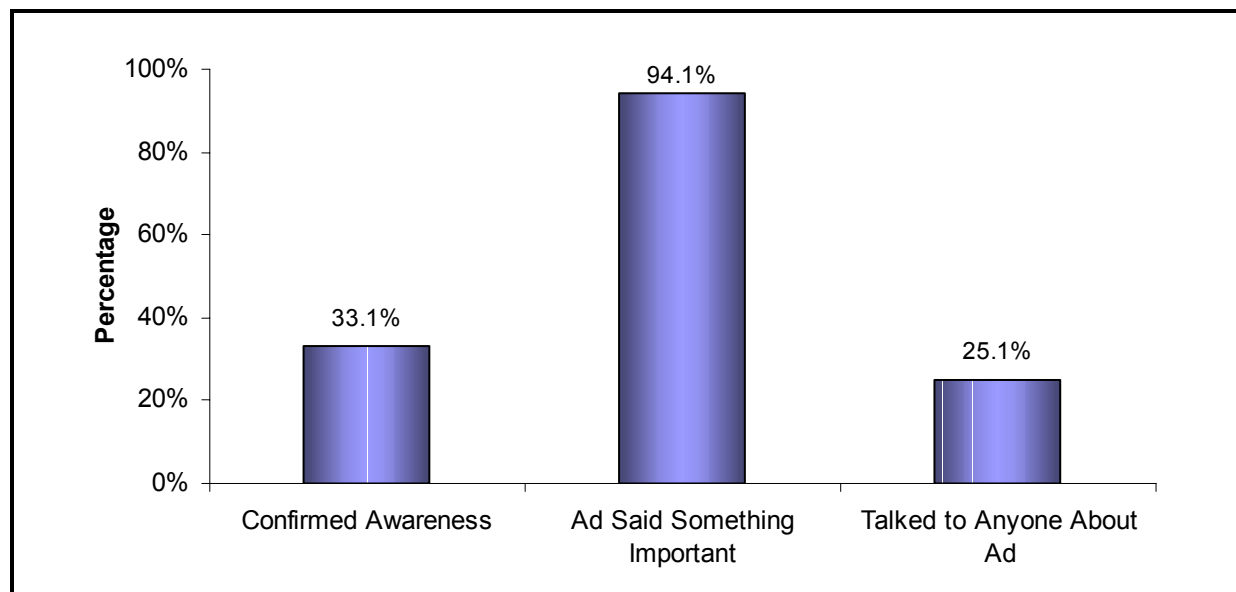
**Results.** *Exhibit 6-46* illustrates a wide range of awareness of various topics among adults—the most frequently seen or heard messages pertain to products to help people quit smoking (79 percent), the dangers of smoking during pregnancy (71 percent), talking to youth about not smoking (66 percent), and the dangers of youth being exposed to secondhand smoke (62 percent). A question with particular relevance to the program has to do with awareness of “places to get help in quitting” (51 percent), which could pertain to ads for the Quitline. Finally, nearly one-half of New Yorkers reported seeing or hearing ads about losing a loved one due to tobacco, and approximately one-third reported seeing or hearing about the number of women who die each year from smoking and efforts by cigarette companies to keep smokers addicted to tobacco.

**Exhibit 6-46. Percentage of Adults Who Report Seeing Various Antitobacco Advertisements in the Past 30 Days, ATS 2003–2004**

**Exhibit 6-47** presents awareness of and reactions to specific NYTCP advertisements. These results indicate that only 33 percent of New Yorkers recalled seeing any one of the eight advertisements aired during the second quarter of 2004. However, 94 percent of those who recalled the advertisements agreed or strongly agreed that the advertisements said something important to them. Finally, 25 percent talked to others about not smoking as a result of seeing the advertisement.

**Discussion.** This section illustrates a significant variation in awareness of antitobacco messages. The relevance of these questions for the evaluation will be determined by what media messages the program chooses to employ in the future. The relatively low level of New Yorkers' awareness of places to get help in quitting illustrates an opportunity for the NYTCP. The importance of trying to influence smokers' and nonsmokers'

**Exhibit 6-47. Percentage of Adults Who Report Awareness of and Reaction to NYTCP Media Campaign Advertisements, ATS Q2 2004**



awareness of the other messages will depend on both programmatic priorities and the extent to which these message types are strongly correlated with program outcomes.

With respect to awareness of and reaction to NYTCP advertisements, it is difficult to fully evaluate New Yorkers' response to these media messages without more complete information about the details of the media buy, such as the amount of spending for these messages (which we do not currently have). Previous experience indicates the current level of awareness of the advertisements is quite low. For example, youth awareness of the national antidrug campaign advertisements is over 75 percent, as is awareness of Legacy's national "truth" campaign. However, New Yorkers who saw the advertisements had favorable reactions and 25 percent talked to others about not smoking—a statistic comparable to other campaigns.

Future research in this area should focus on what message themes and styles of advertisements have the most potential to raise awareness, provoke positive responses, and ultimately influence behavior.

**Youth's Awareness of Antitobacco Media Messages**

The YTS contains the following awareness questions: "During the past 30 days, how often did you see antismoking commercials [on TV\on the radio\in magazines or newspapers]?" Response categories for these three questions are as follows:

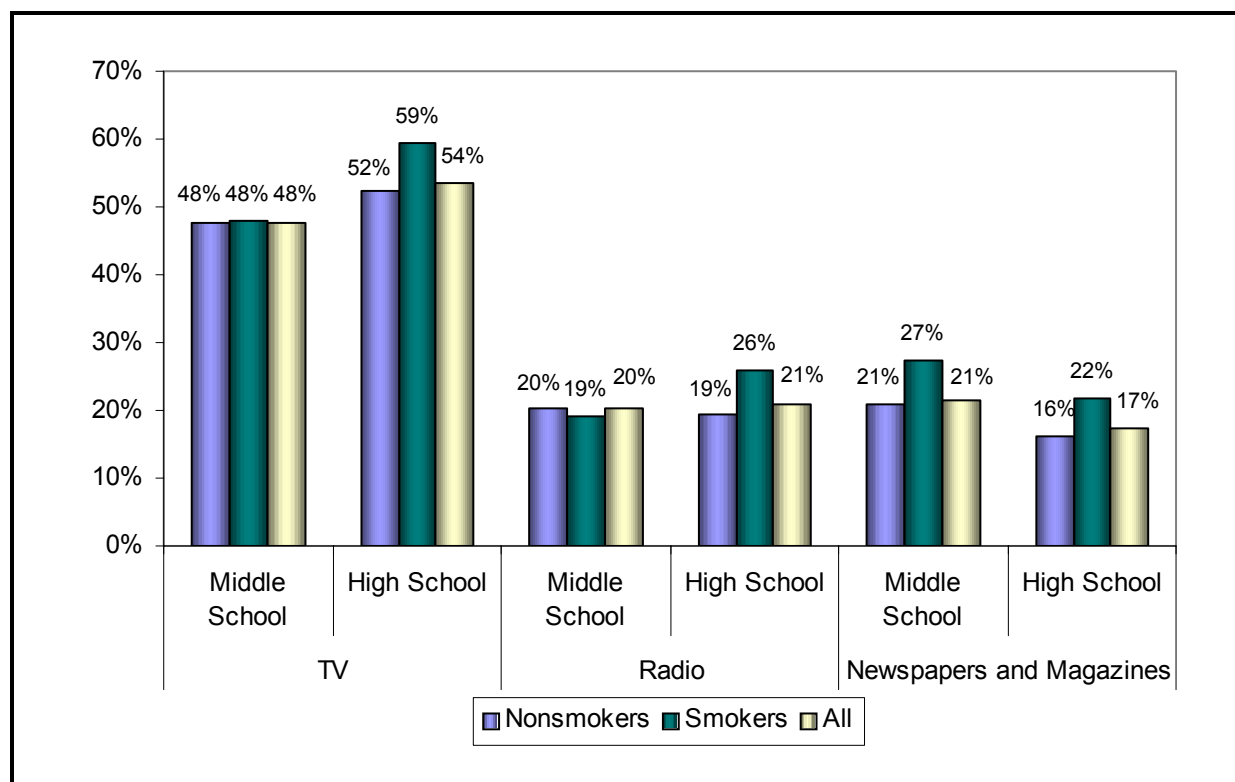
- Not in the past 30 days
- 1 to 3 times in the past 30 days
- 1 to 3 times per week
- Daily or almost daily
- More than once per day
- I did not [watch TV\listen to the radio\read magazines or newspapers]

For the summary statistics below, we created a dichotomous indicator that indicated seeing or hearing antismoking commercials at least daily or almost daily. Those who did not see or hear the particular media were excluded from the analysis. We summarize youth's awareness overall and by school level and smoking status.

**Results.** In *Exhibit 6-48*, more than 45 percent of all middle school students and more than half of all high school students said they had seen antitobacco ads on television at least almost daily. There were no significant differences by smoking status or grade level. Awareness levels for radio and print are roughly half that for television.

**Discussion.** Nearly half of students at all grade levels reported seeing or hearing antitobacco messages almost daily or more. We should point out, however, that antitobacco messages are disseminated by many groups in addition to the NYTCP and its funded partners, including Legacy's "truth" campaign, Philip Morris, and others. Historically, Legacy's "truth" campaign has reached roughly three-quarters of youth, but funding for this campaign is likely to diminish rapidly.

**Exhibit 6-48. Percentage of Youth Who Saw Antitobacco Advertisements, by Smoking Status, YTS 2002**



#### 6.4.4 Awareness of Pro-Tobacco Advertising and Promotions

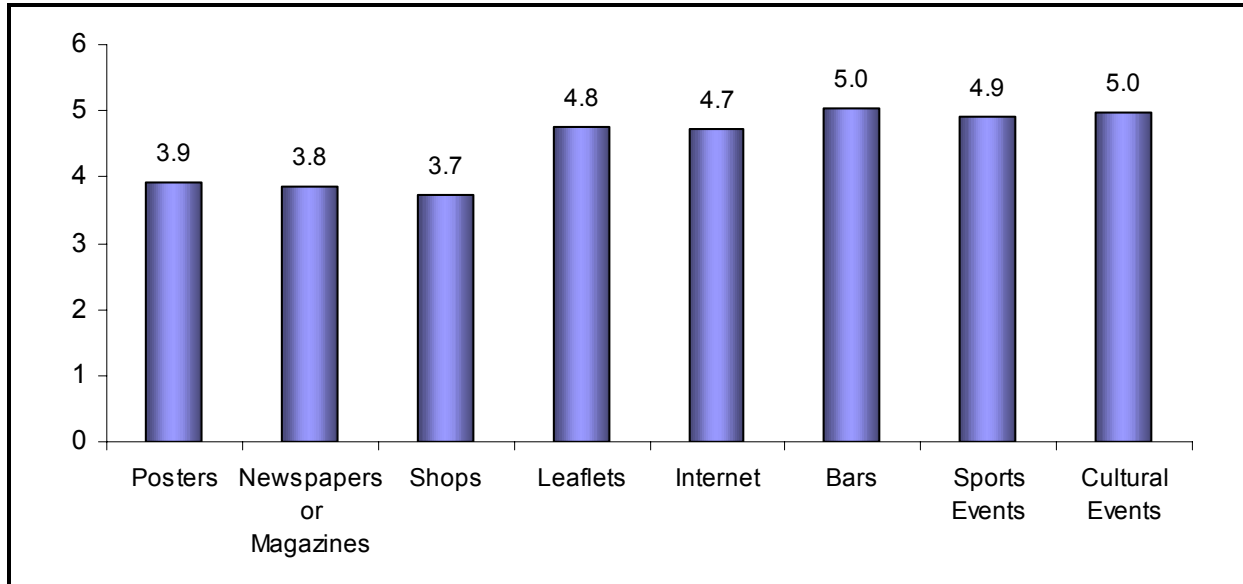
In this section, we present summary statistics of adults' and youth's awareness of and exposure to tobacco advertising and promotions. We begin by summarizing data from the ATS and then the YTS.

##### **Adults' Awareness of Pro-Tobacco Advertising and Promotions**

All of the ATS data presented in this section are based on data pooled across the four quarterly surveys conducted from June 2003 to June 2004. There were no statistically significant trends across quarters. Where there were meaningful differences, we present summary statistics by smoking status.

**Results.** The ATS asks respondents about pro-tobacco advertisements, sponsorship of various events, and promotional materials that they might have seen and/or received in the past 30 days. **Exhibit 6-49** presents the average number of times in the past month that adults noticed cigarette or tobacco

**Exhibit 6-49. Frequency of Seeing Pro-Tobacco Advertising in Various Media and Venues in the Past 30 Days, ATS 2003–2004**

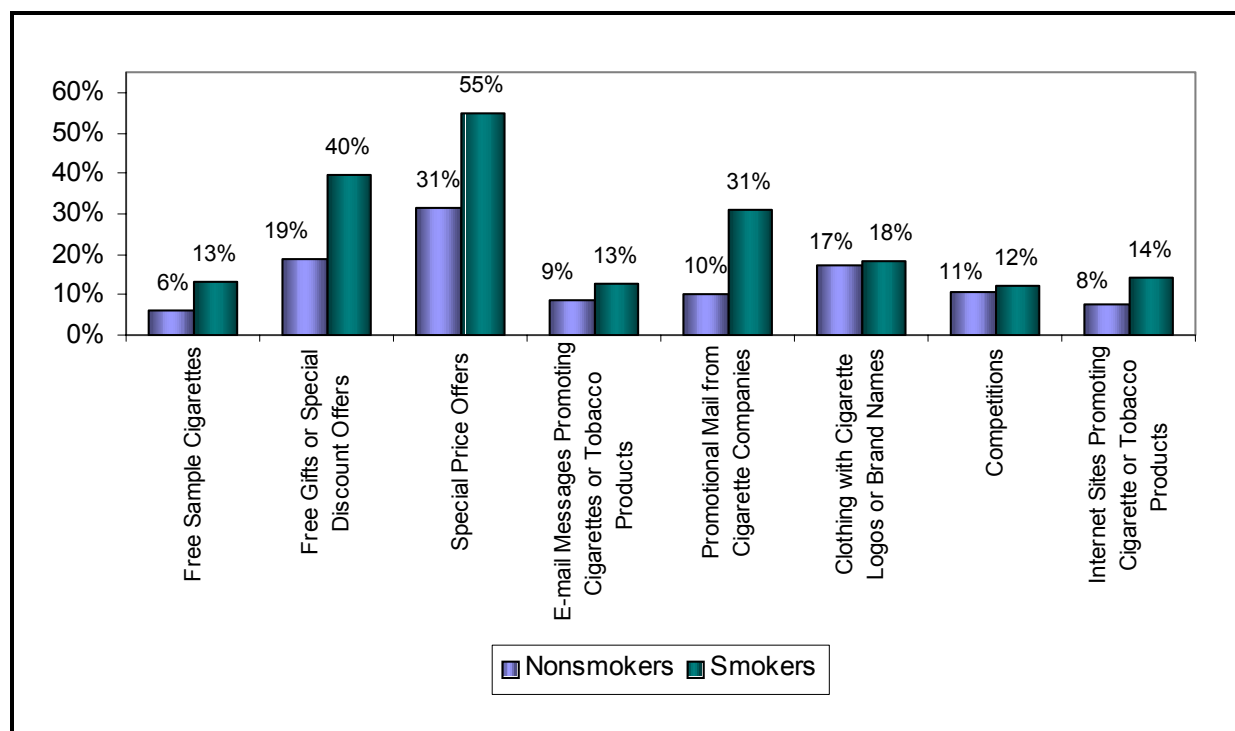


products being advertised or promoted. There were no significant differences by smoking status or quarter, so we report overall statistics. There is little variation in recall of seeing tobacco advertising across the various media and venues displayed in this exhibit—approximately 4 to 5 times per month.

New Yorkers were also asked about promotional items or messages they might have received from cigarette companies (**Exhibit 6-50**). Not surprisingly, there were many statistically significant differences by smoking status, so we present the statistics for smokers and nonsmokers.

About twice as many smokers as nonsmokers received free gifts or special discount offers (40 percent vs. 19 percent) and free sample cigarettes (13 percent vs. 6 percent). More than half of smokers (55 percent) and nearly one-third of nonsmokers (31 percent) received special price offers. About 13 percent of smokers and about 9 percent of nonsmokers received e-mail messages, and one-third of smokers and about one-tenth of nonsmokers said they had received promotions through the mail. The differences between smokers and nonsmokers for all categories of promotional activities were

**Exhibit 6-50. Percentage of Adults Who Received Promotional Items Through Various Channels by Smoking Status, ATS 2003–2004**



statistically significant at the 5 percent level. About 17 to 18 percent of individuals received clothing with cigarette logos or brand names, and about 10 to 12 percent of individuals noticed competitions linked to cigarettes with no significant differences by smoking status. Significantly more smokers (14 percent) than nonsmokers (8 percent) noticed Internet sites promoting cigarettes or tobacco products.

**Discussion.** The lack of variation in adults' recall of advertising in various settings may suggest that tobacco companies use these various channels equally or that adults may not be able to accurately recall where and how often they saw these ads. The fact that there are no differences in awareness by smoking status seems also to suggest that this method of capturing exposure to advertising may not effectively assess true exposure. One might expect that smokers would be more attentive to and therefore aware of tobacco advertising and have higher recall.

In contrast, reported exposure to promotional efforts by tobacco companies varies significantly by smoking status and by channel. What is remarkable about these data is how commonly smokers routinely receive promotions through various channels. In particular, special price and discount offers are quite prevalent, possibly suggesting that tobacco companies are aggressively promoting cigarettes to compensate for the relatively high cigarette excise taxes in New York.

***Youth's Awareness of Pro-Tobacco Advertising and Promotions***

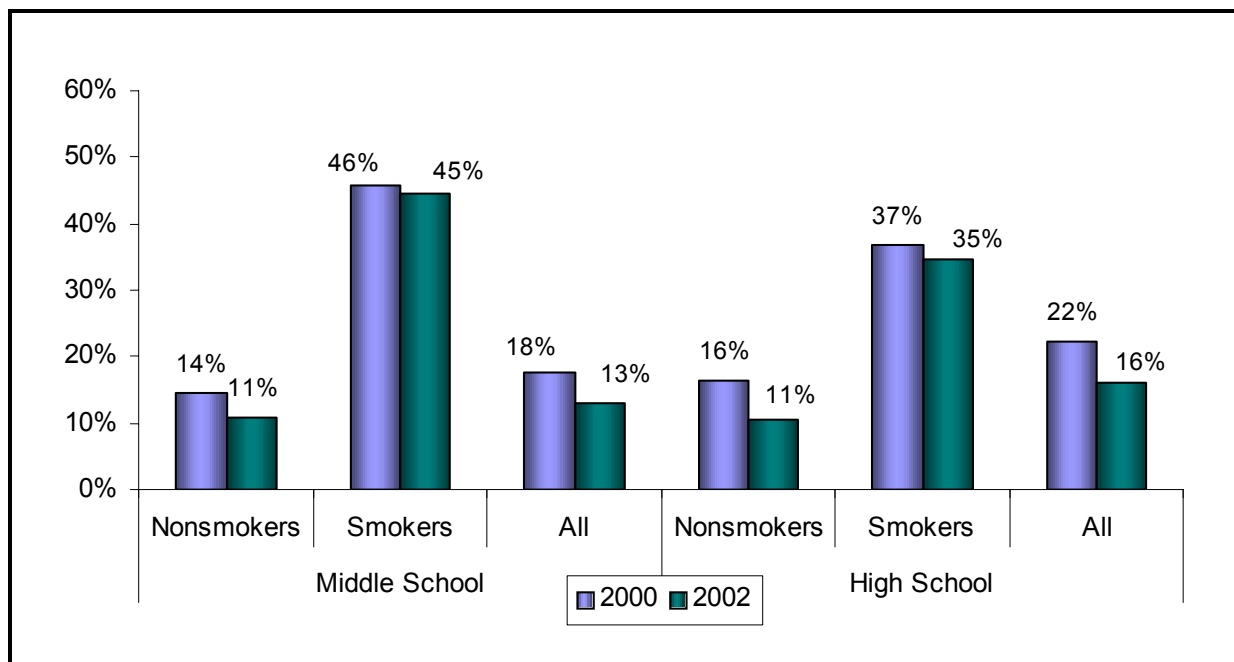
In this section, we present youth's attitudes, beliefs, and awareness of advertising. The data come from the 2000 and 2002 YTS and in some cases are restricted to 2002 outcomes if comparable questions did not exist in the 2000 version of the survey. Statistics are presented by school status (middle and high school) and smoking status (whether the respondent smoked cigarettes in the past 30 days [smoker] or not).

***Exhibit 6-51*** reports the proportion of youth who bought or received anything in the past 12 months that had a tobacco company name or picture on it. Approximately 45 percent of middle school smokers in 2000 and 2002 report having received a branded item in the past year; the comparable statistic for high school smokers is 35 percent in 2000 and 37 percent in 2002. The analogous percentages for nonsmokers are one-third to one-fourth as high as those for smokers and are significantly different from those for smokers in both years.

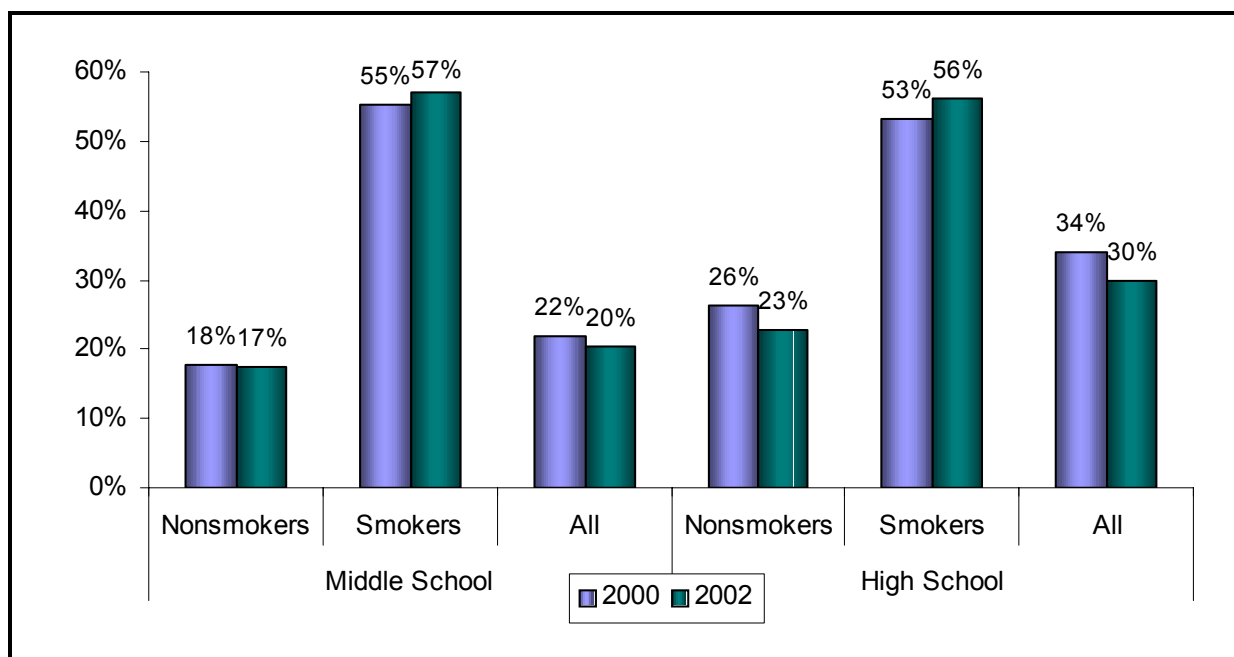
***Exhibit 6-52*** illustrates youth's openness to tobacco companies' branded items. These data show that more than half of middle and high school smokers in both years are open to branded items. In addition, nearly one in five nonsmoking middle school students and roughly one in four nonsmoking high school students are open to tobacco marketing.



**Exhibit 6-51. Percentage of Youth Who Bought or Received Anything in the Past 12 Months with a Tobacco Company Name or Picture On It, YTS 2000–2002**



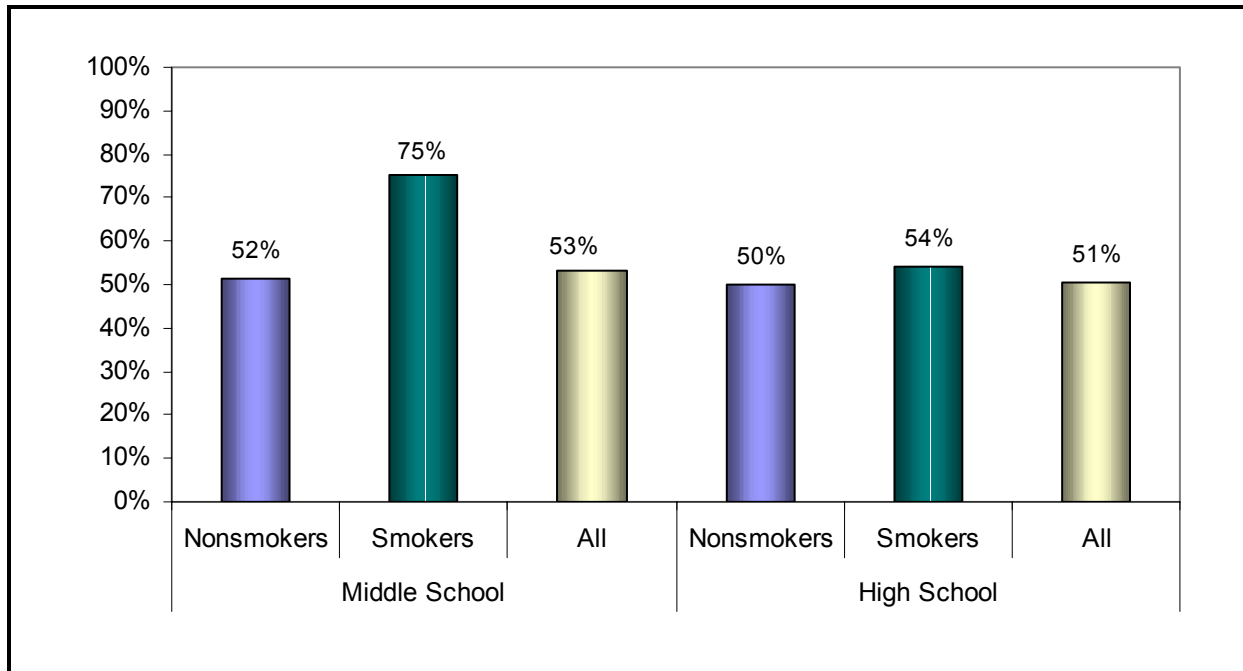
**Exhibit 6-52. Percentage of Youth Who Would Ever Use or Wear Something with a Tobacco Company Name or Picture On It, YTS 2000–2002**



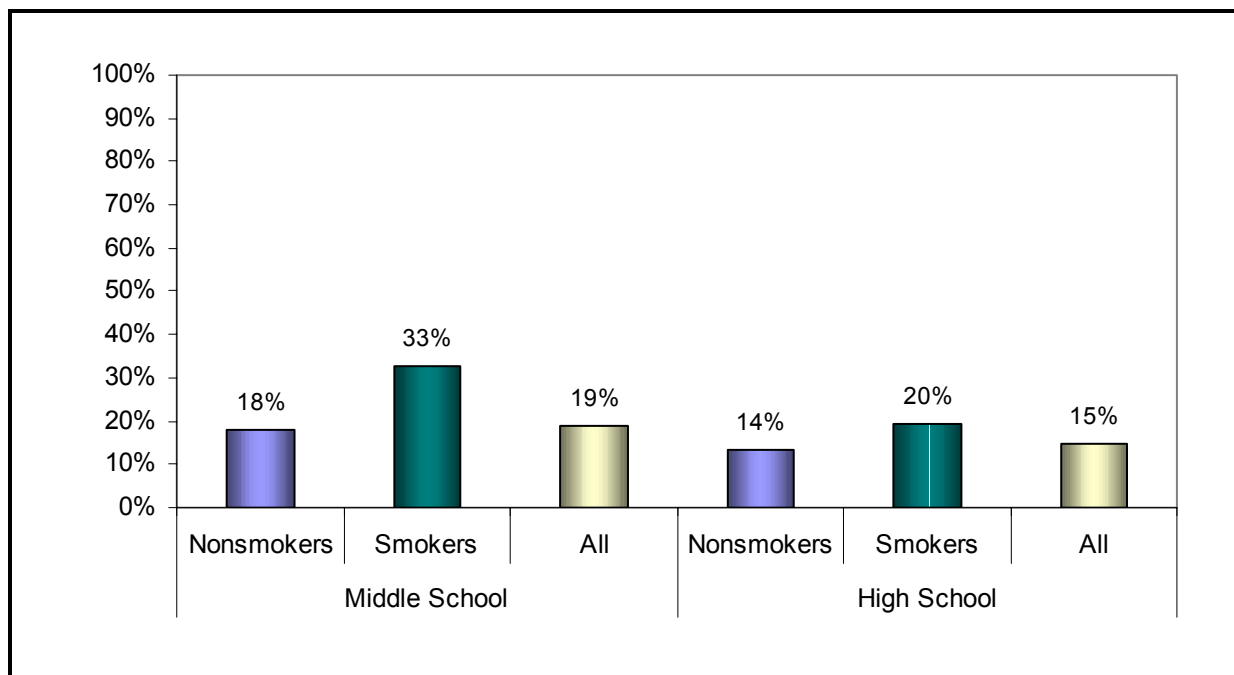
**Exhibits 6-53** through **6-56** present statistics on youth's recall of seeing smoking on television or in the movies and tobacco advertising in various media and settings. In each of these exhibits, we report whether students saw the relevant information "all of the time," or "most of the time." The other choices were "some of the time," "hardly ever," or "never." Exhibit 6-53 reports the percentage of youth who saw actors smoking on television or in the movies. More than half of all middle school students and three-quarters of middle school smokers said they saw actors smoking. The analogous percentages for high school smokers and nonsmokers are 54 percent and 50 percent, respectively.

About 1 in 6 nonsmokers and 1 in 3 smokers in middle school report frequently seeing tobacco ads on the Internet (among the 92 and 93 percent of middle and high school students respectively who used the Internet) (see Exhibit 6-54). The percentages are lower among high school students: 20 percent for smokers and 14 percent for nonsmokers.

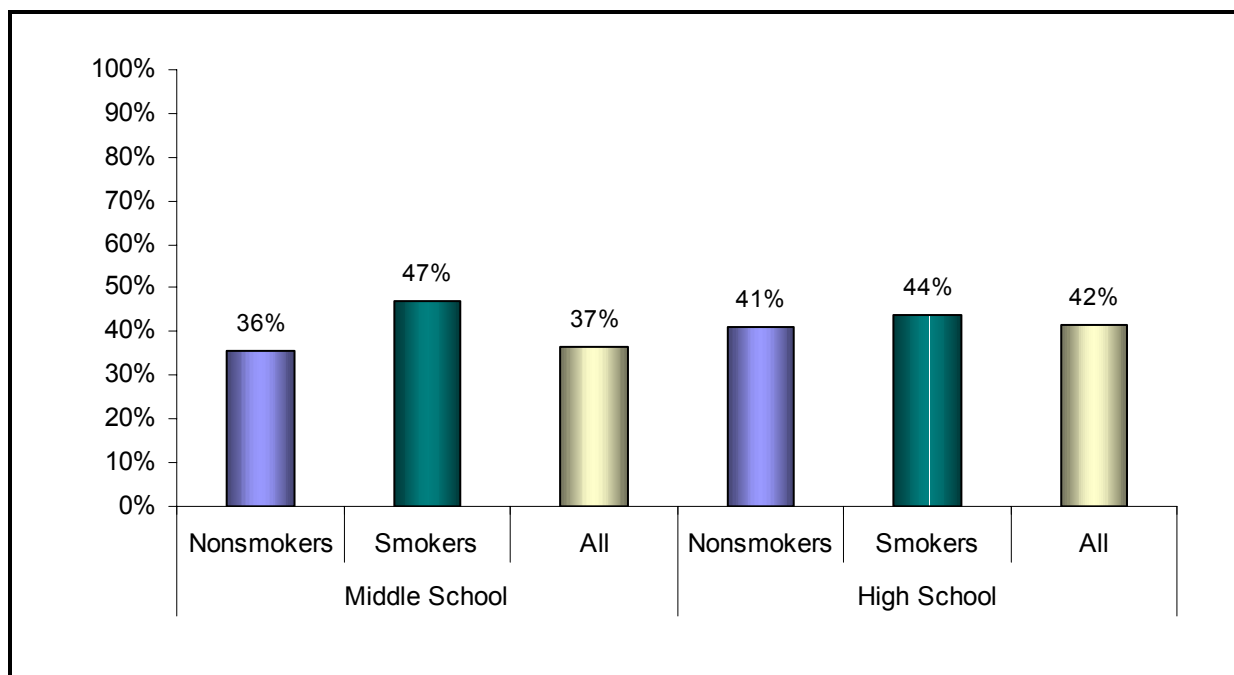
**Exhibit 6-53. Percentage of Youth Who Report Frequently Seeing Actors Smoking in Television or Movies, YTS 2002**

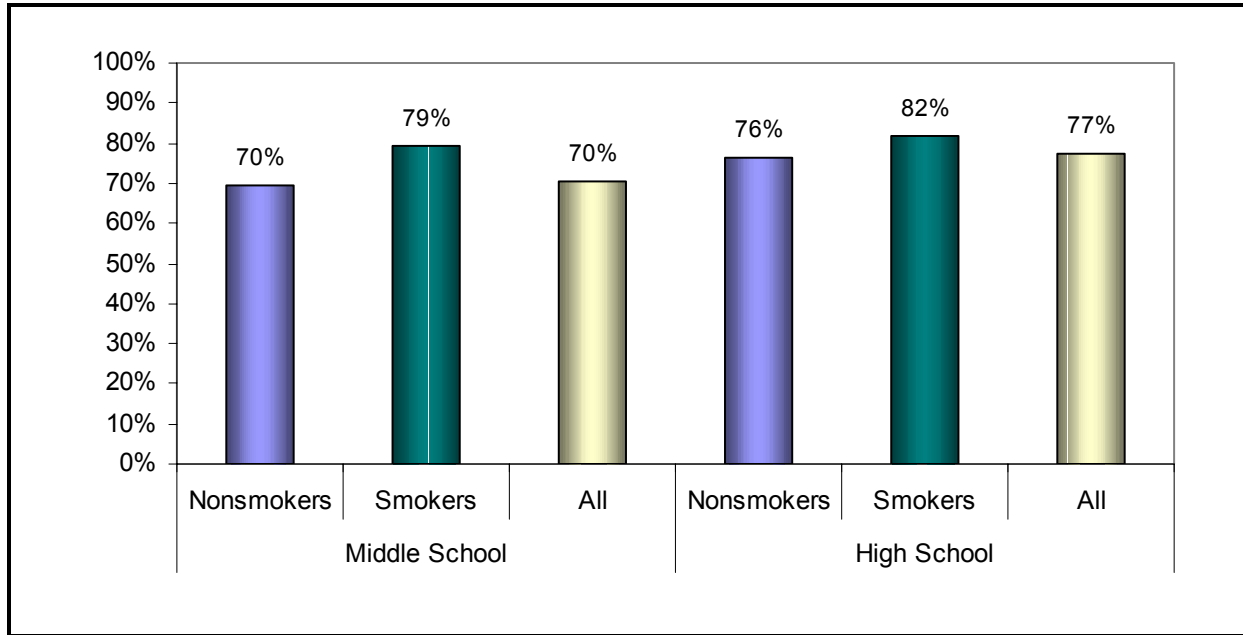


**Exhibit 6-54. Percentage of Youth Who Report Frequently Seeing Tobacco Advertising on the Internet, YTS 2002**



**Exhibit 6-55. Percentage of Youth Who Report Frequently Seeing Tobacco Advertising in Newspapers and Magazines, YTS 2002**



**Exhibit 6-56. Percentage of Youth Who Report Frequently Seeing Tobacco Advertising at Convenience or Grocery Stores and Gas Stations, YTS 2002**


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*In a post-Master Settlement Agreement (MSA) era where tobacco advertising and marketing is restrained and branded tobacco items are not permitted, youth are bombarded with smoking advertising, marketing, and imagery in multiple media.*

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Among those who read magazines and newspapers (among the 89 and 92 percent of middle and high school students respectively who read magazines and newspapers), more than one-third of middle school students and almost half of middle school smokers reported frequently seeing tobacco ads (see Exhibit 6-55). More than 4 out of 10 high school students overall and by smoking status report frequently seeing tobacco ads when they read magazines and newspapers.

The percentages are substantially higher for youth who frequently saw ads at convenience or grocery stores and gas stations (see Exhibit 6-56). More than 70 percent of all adults and about 80 percent of smokers said they saw these ads most or all of the time.

**Discussion.** In a post-Master Settlement Agreement (MSA) era where tobacco advertising and marketing is restrained and branded tobacco items are not permitted, youth are bombarded with smoking advertising, marketing, and imagery in multiple media. For example, approximately 45 percent of middle school smokers and 35 percent of high school smokers report receiving or buying a branded tobacco item in the past 12 months. Although youth may be confounding this question or

branded items with promotional materials they may have received, the high levels of exposure are troubling and deserve greater attention. This point is highlighted by the fact that so many nonsmoking teens are open to these branded items—17 percent and 23 percent of nonsmoking middle and high school students, respectively, indicate that they use or wear a tobacco branded item. Youth are also frequently exposed to a significant amount of advertising in newspapers and magazines (approximately 40 percent) and retail outlets (over 70 percent). Finally, more than 50 percent of middle and high school students report frequently seeing smoking in the movies. Exposure to smoking in the movies has been linked to increased uptake of smoking among youth (Dalton et al., 2004).

#### **6.4.5 Summary**

##### ***Attitudes Toward Tobacco***

- More than three-quarters of adult New York smokers agree that smokers' risk of lung cancer is higher than for nonsmokers, but the analogous statistics for other cancers is only 50 percent. In addition, 62 percent agree that smokers' risk of heart disease is higher than that of nonsmokers.
- Twenty-nine percent of New Yorkers agree (incorrectly) that there is little benefit to quitting for smokers who have smoked a pack a day for 20 years.
- A significant number of smokers have misconceptions about light cigarettes and the dangers of nicotine.
  - Fifty-seven percent of smokers incorrectly believe that high tar cigarettes are at least twice as likely to cause illness as low tar cigarettes.
  - Nearly half of smokers see a benefit to smoking light cigarettes.
  - Both of these findings are in contrast to evidence that indicates there are no health benefits to low tar cigarettes.
  - Seventy-three percent of smokers incorrectly believe that nicotine causes cancer.
  - Approximately 60 percent of smokers state that nicotine patches are less likely than regular cigarettes to cause someone to become addicted.

- New Yorkers are in favor of limiting the amount of smoking in movies.
  - Nearly 70 percent of New Yorkers agree that smoking should not be allowed in movies rated G, PG, or PG-13.
  - Approximately half of New Yorkers believe that movies with a lot of smoking should be rated R.
  - Nearly two-thirds of all adults believe that smoking in the movies does encourage youth smoking.
- Turning to youth, only 3 percent of youth fail to recognize the dangers of smoking, but 15 to 18 percent think that smoking is socially desirable.
- Approximately 60 percent think that cigarette companies are not getting too much blame, and nearly two-thirds believe that cigarette companies have denied that cigarettes cause cancer and other harmful diseases.
- All of these attitudes among youth are correlated with smoking status, suggesting that changes in these attitudes could bring about changes in smoking behavior.

#### ***Awareness of Antitobacco Messages***

- Adults recall seeing or hearing a wide range of antitobacco messages in the past month.
  - Messages pertaining to products to help people quit smoking (79 percent) are the most commonly recalled, followed by the dangers of smoking during pregnancy (71 percent).
  - Talking to youth about not smoking (66 percent) and the dangers of youth being exposed to secondhand smoke (62 percent) are also common.
  - Just over half (51 percent) recall messages about “places to get help in quitting,” which could pertain to ads for the Quitline.
  - Just under half of New Yorkers report seeing or hearing ads about losing a loved one due to tobacco.
- Turning to specific awareness of NYTCP sponsored messages:
  - One-third of New Yorkers recall seeing one of the eight advertisements that aired in the second quarter of 2004.
  - Ninety-four percent of those who saw the advertisements agreed or strongly agreed that they said something important to them.

- One in four who saw the advertisements spoke to others about not smoking after seeing the advertisements.
- Nearly half of students at all grade levels report seeing or hearing antitobacco messages almost daily or more.

#### ***Awareness of Pro-Tobacco Messages***

- Marketing and promotional efforts by tobacco companies are widespread.
- In the past month, 40 percent of adult smokers received free gifts or special discount offers and about 13 percent received free sample cigarettes.
- About 50 percent of adult smokers received special price offers, and 30 percent received a promotional mailing.
- Eighteen percent of adult smokers reported receiving clothing with cigarette logos or brand names, even though these are a violation of the MSA.
- Approximately 45 percent of middle school and 35 percent of high school smokers report receiving or buying a branded tobacco item in the past 12 months.
- Many nonsmoking students are open to these branded items—17 percent and 23 percent of nonsmoking middle and high school students, respectively, indicate that they use or wear a tobacco branded item.
- Youth are also frequently exposed to a significant amount of advertising in newspapers and magazines (approximately 40 percent) and retail outlets (more than 70 percent).
- More than 50 percent of middle and high school students report frequently seeing smoking in the movies.

#### **6.4.6 Conclusions and Next Steps**

Results from this section provide a wealth of information that can be used to evaluate the NYTCP's progress in changing attitudes, increasing knowledge, and generally reducing the acceptability of tobacco. These data also highlight a number of knowledge deficits that the program should work to correct. For example, adult New Yorkers' understanding of the health risks of tobacco and specific tobacco products such as light cigarettes can be significantly improved. For example, 29 percent of adults indicate that there is little benefit to quitting for smokers who have smoked a pack of cigarettes a day for 20 years, when there are benefits. In addition, smoking and nonsmoking adults alike greatly overstate the benefits of low-

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*Twenty-nine percent of adults indicate that there is little benefit to quitting for smokers who have smoked a pack of cigarettes a day for 20 years, when there are benefits. In addition, smoking and nonsmoking adults alike greatly overstate the benefits of low-tar or light cigarettes.*

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tar or light cigarettes. Finally, nearly one in four New York adults fail to recognize that smoking increases the risk of lung cancer. Among middle and high school students, awareness of the health risks of smoking is high, but 15 to 18 percent of youth find smoking to be socially desirable. The program should address these significant knowledge deficits and misperceptions with prominent countermarketing efforts with advertisements created consistent with best practices.

Findings in this section of the report also indicate widespread support (70 percent) among adults for not allowing smoking in movies rated G, PG, and PG-13, and nearly two-thirds believe that smoking in the movies encourages youth smoking. Earlier, we indicated that although the prevalence of smoking has declined dramatically in the United States over the past 60 years, portrayals of smoking in the movies has not. The NYTCP's 2-year Smokefree Movie initiative may have raised awareness of this issue and in any case is a well placed program priority, given the exposure of youth to smoking in movies and the impact of that exposure on youth initiation.

We found that only one-third of New Yorkers recalled seeing specific NYTCP advertisements in the second quarter of 2004, when eight advertisements were on the air. We recommend that the program set a goal of awareness of specific NYTCP advertisements of 60 percent of New Yorkers. Hornik (2002) suggests that a crucial failing of public education efforts has been to not pay sufficient attention to exposure. He states that the "level of exposure to messages is probably a central issue in constructing public education programs; one may need to get a lot of it before expecting effects" (Hornik, 2002, p. 16). In addition to a relatively low level of awareness of specific NYTCP advertisements, we found that only half of adults recall hearing or seeing messages about "places to get help in quitting." This suggests that additional activities are needed to promote the Quitline and other services for smokers who want to quit.

We also found that tobacco marketing and promotional efforts are widespread and reach both youth and adults. For example, 40 percent of adult smokers received free gifts or special offers, 50 percent received a special price offer, and 30 percent received a promotional mailing. Youth are also consistently



exposed to tobacco-promoting influences. More than half of middle and high school students report frequently seeing smoking in the movies and 70 percent indicate frequently being exposed to advertising in retail outlets.

These sobering statistics indicate that the estimated \$830 million spent on tobacco advertising and promotions in New York State annually is having its intended effect. These facts also serve as a reminder that the NYTCP's efforts need to be evaluated accounting for the influence of well-funded tobacco-promoting influences.

In total, these findings suggest that to effectively combat the influence of smoking in the movies and ubiquitous tobacco marketing and promotions and to correct gaps in knowledge and attitudes, the program needs to invest more aggressively in countermarketing and other interventions. In addition, the effectiveness of the existing efforts needs to be improved so that New Yorkers' find the messages salient and memorable. Some examples of these additional efforts may include drawing attention to the disconnect between the amount of smoking in the movies compared with actual smoking rates among the general population, correcting smokers' beliefs about the benefits of low tar cigarettes, further highlighting the health risks of tobacco, and seeking out opportunities to curb tobacco marketing and promotions.

Countermarketing efforts should include messages consistent with best practices and should be planned far enough in advance to permit coordination with other program efforts, such as community mobilization. Longer-term planning for countermarketing efforts will also aid the evaluation because it will permit us to modify the ATS and other surveys to include knowledge and attitude questions that are consistent with the targeted media messages.

From the standpoint of the evaluation, we will continue to monitor the measures presented in this section to measure NYTCP progress toward stated objectives.

## **6.5 GOAL 3: PROMOTE CESSATION FROM TOBACCO USE**

### **6.5.1 Overview**

To achieve the overall goal of promoting cessation, the NYTCP currently focuses its efforts on the following:

- Promoting the New York State Quitline, which provides counseling and information to tobacco users who want to quit; information to Medicaid recipients on Medicaid cessation coverage; and free nicotine replacement therapy (NRT), as available.
- Increasing implementation and use of tobacco use screening and assessment systems within health care organizations.

The latter is accomplished by funding Cessation Centers across the state to provide training, technical assistance, and follow-up to health care provider organizations to implement these systems.

The NYTCP also plans to work with the New York Health Plan Association and other health insurance plans to demonstrate the need for and feasibility of offering cessation services and support, including pharmacotherapy, as a covered benefit.

The ATS has comprehensive data on cessation-related measures that can be used to evaluate progress toward multiple objectives within the goal of promoting cessation. It contains measures of short-, intermediate, and longer-term cessation outcomes that can be grouped into the following general cessation-related topics:

- Cessation-related behaviors—quit attempts, intentions to quit, and methods used in quitting
- Support for cessation—insurance coverage, access to free NRT, and employer support for cessation
- Awareness and use of the Quitline and awareness of cessation-related media messages
- Health care provider assistance in cessation

Our findings from the ATS and the CPS are presented following these groupings.

Data presented from the ATS serve largely as a baseline against which we can measure future progress. To complement

the data from the ATS, we present comparisons from the CPS between New York and the rest of the United States prior to the launch of the program from 1992 to 2000 and the first 2 years of the program from 2000 to 2002. The CPS contains questions on smokers' quit attempts, intentions to quit, and employer support for cessation. As with our earlier analysis of the prevalence of smoking, these types of analyses provide an indication of whether trends in cessation-related outcomes improved in New York after 2000 compared to the average state.

### **Methods**

For the available measures in the CPS, we present simple descriptive trends for each outcome for New York and the remaining United States from 1992 to 2002. We also estimated simple multiple regression models that compare the level of each outcome in the period prior to the year 2000 (1992 to 2000) to the post-2000 period (2000 to 2002) controlling for cigarette excise taxes and other factors. Given that the NYTCP began in 2000, these models give us a crude test of program impact net of taxes.

For the ATS analyses, we pooled the first four quarters of data from June 2003 to June 2004 and estimated the prevalence of cessation-related attitudes, intentions, and behaviors. Because the program focuses cessation efforts on the Medicaid and non-Medicaid eligible poor in addition to the general population, we conducted separate ATS analyses for each population group.

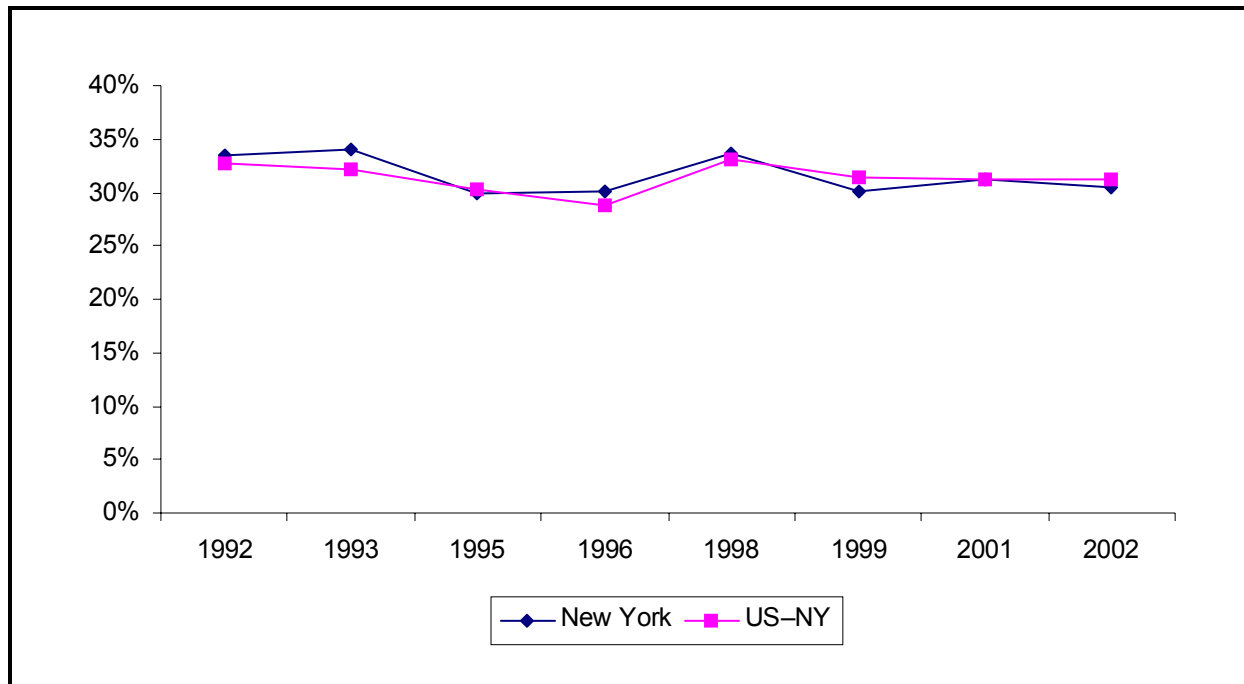
**Exhibit 6-57** presents selected descriptive statistics for these subgroups.

### **Results—Cessation Behaviors**

**Quit Attempts.** The percentage of smokers who made a quit attempt in the past 12 months is shown in **Exhibit 6-58** for the years 1992 to 2002 for New York and the remaining United States. The percentage of smokers who made quit attempts and the trend have been similar for both New York and the rest of the United States from 1992–2002.

**Exhibit 6-57. Prevalence of Smoking, Quitting, and Average Cigarettes Smoked for Medicaid, Non-Medicaid Eligible Low-Income, and All Adults, ATS 2003–2004**

	Medicaid	Non-Medicaid Low Income	Overall
	8.0%	31.3%	100.0%
Current smokers	35.5%	24.5%	20.4%
Current everyday smokers	27.8%	19.3%	16.0%
Current someday smokers	7.7%	5.1%	4.4%
Recent quitters (former smokers with a quit in the past 12 months)	1.9%	4.5%	4.9%
Average number of cigarettes smoked per day by current smokers	15.0	15.0	15.7

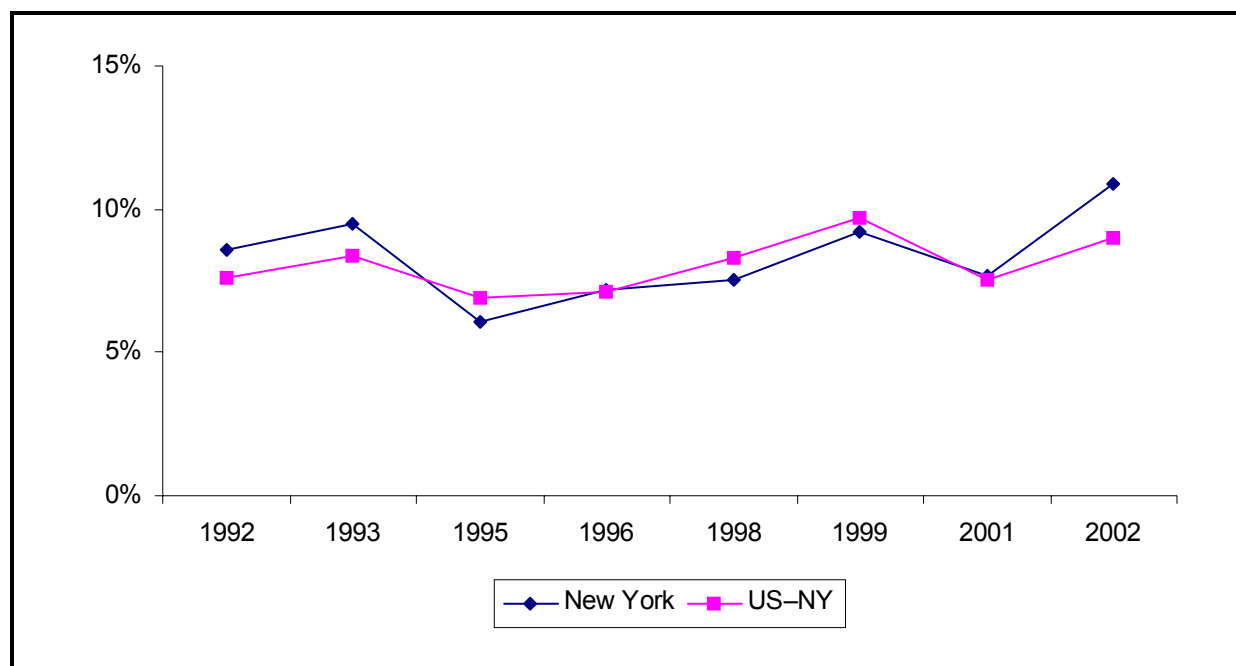
**Exhibit 6-58. Percentage of Adult Current Everyday Smokers Who Made a Quit Attempt in the Past 12 Months, CPS-TUS 1992–2002**

The CPS also asks about the duration of the longest quit attempt for those who have made a quit attempt in the past year. This variable can be used to define a measure of successful or maintained cessation for current nonsmokers

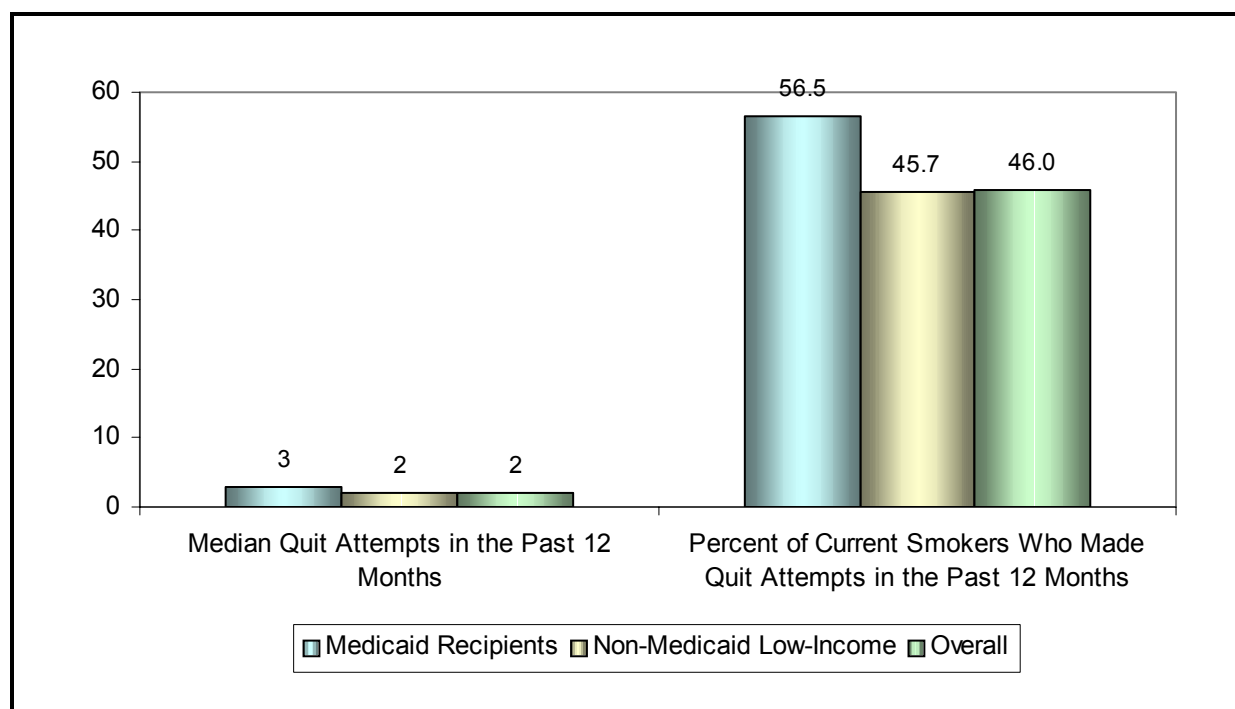
(former smokers) who have made a quit attempt (have quit) in the past year.

**Exhibit 6-59** presents the trend for successful cessation for New York and the rest of the United States. The trend in the percentage of former smokers who have quit in the past year and have maintained the quit attempt for at least 6 months ("successful quit rate") is similar for New York and the rest of the United States from 1992 through 2000. In 2002, this percentage appears higher in New York than in the rest of the United States (10.9 percent for New York and 9.0 percent for the rest of the United States), but the small difference is not statistically significant.

**Exhibit 6-59. Successful Quit Rate, CPS-TUS 1992–2002**



Turning to more recently available data from the ATS, **Exhibit 6-60** presents the median number of quit attempts as well as the percentage of current smokers who have made quit attempts in the past 12 months. Overall, 46 percent of current smokers made at least one quit attempt, and the median number of quit attempts in the past 12 months was two. Medicaid recipients had both the highest number of quit attempts (3) and the highest percentage of current smokers

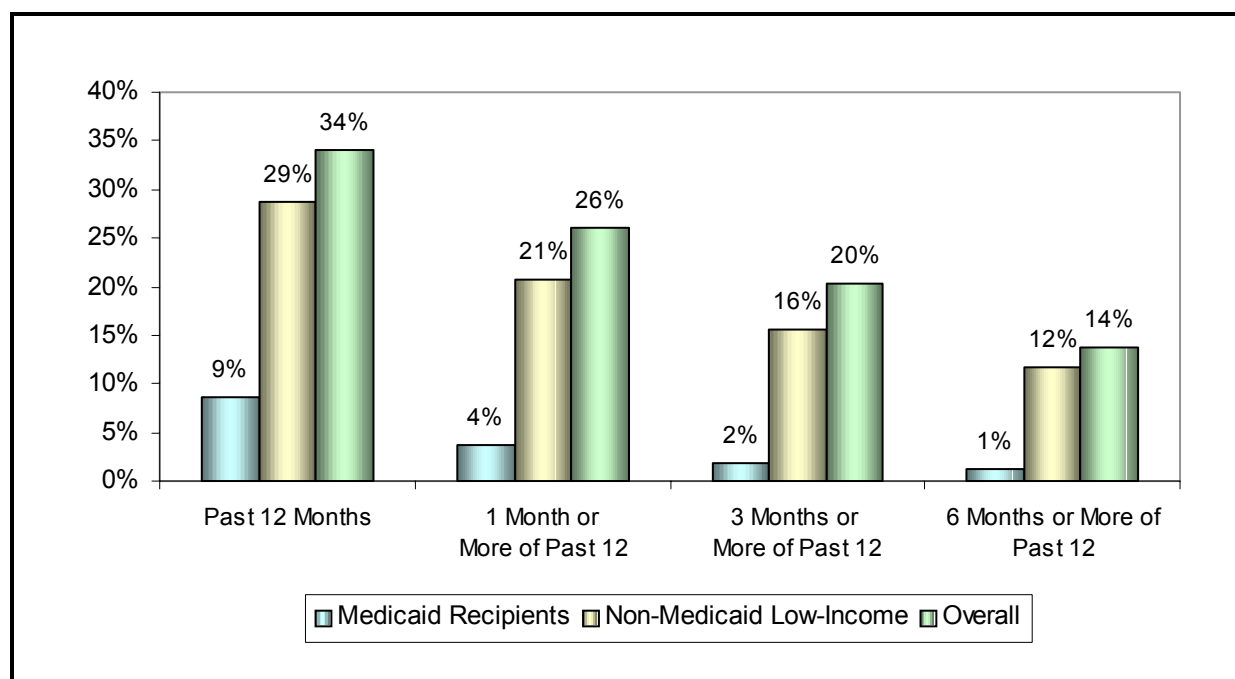
**Exhibit 6-60. Quit Attempts Among Current Smokers, NY ATS Q3 2003–Q2 2004**

who made quit attempts (57 percent) in the past 12 months (the latter difference was statistically significant).

In **Exhibit 6-61**, we present results from the ATS that speak to the success New York smokers have had over the prior year at maintaining quit attempts. The percentage of successful quit attempts in the past 12 months is defined as the number of former smokers who have quit in the past 12 months divided by the number of former smokers who have quit in the past 12 months plus the number of current smokers who tried to quit in the past year. Definitions are similar for quit attempts lasting longer than 1, 3, and 6 months.

These data show that although more than one-third of smokers quit for at least 1 day in the past 12 months, only 14 percent were able to remain quit for at least 6 months. Medicaid recipients have statistically significantly fewer successful quit attempts than other New York smokers even though they make more attempts.

**Exhibit 6-61. Percentage of Successful Quit Attempts, ATS Q3 2003–Q2 2004**

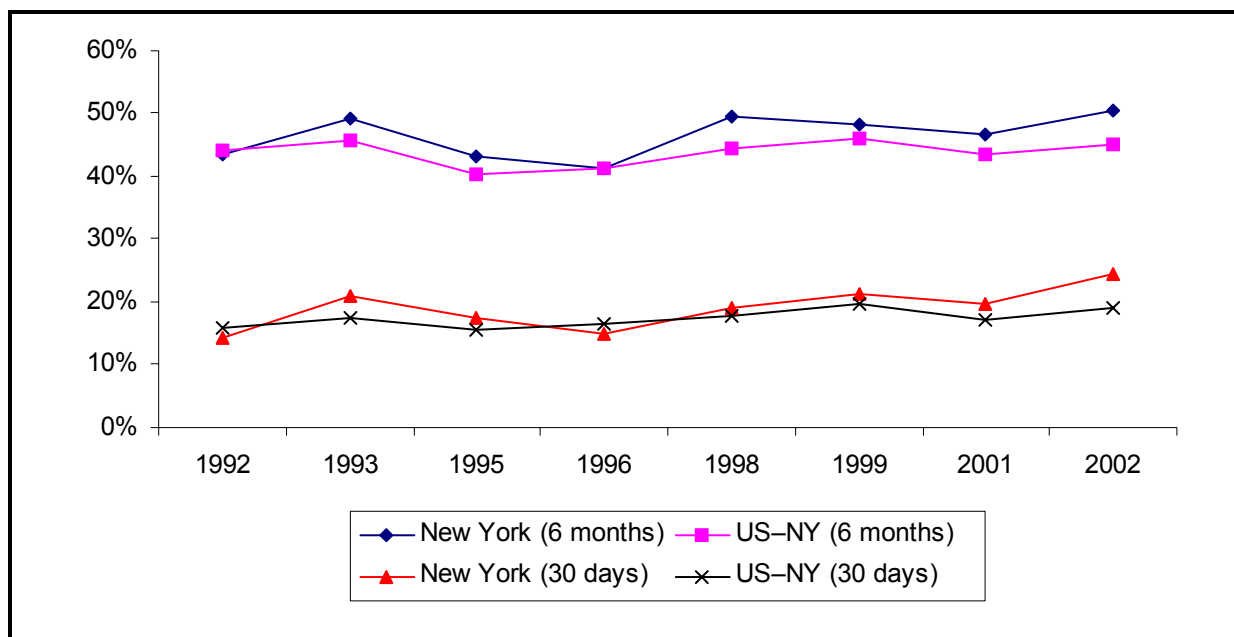


**Exhibit 6-62** presents the trends in the percentage of smokers planning on quitting in the next 6 months and next 30 days for New York and the remaining United States. By 2002, nearly one-quarter of New York smokers report having plans to quit in the next 30 days and one-half of smokers report having plans to quit in the next 6 months.

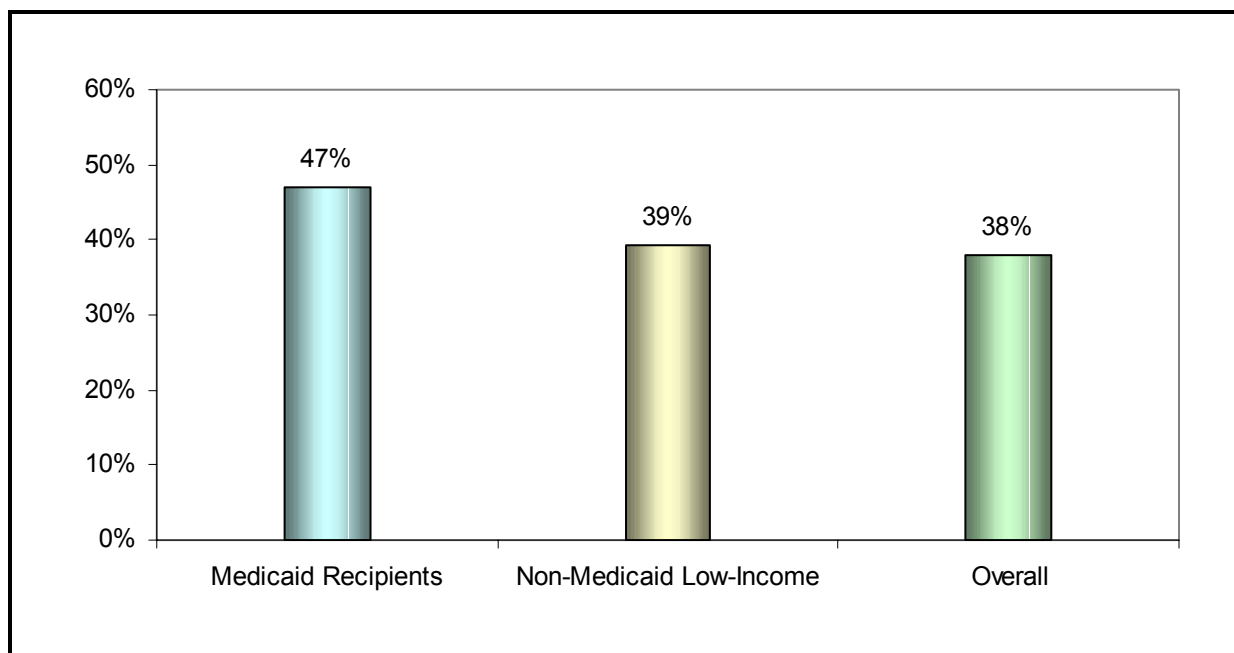
Several items related to quitting are asked in the ATS, including (1) intentions to quit in the next 6 months and in the next 30 days; and (2) for those who want to quit, whether they want to quit smoking a lot, somewhat, a little, or not at all.

**Exhibit 6-63** shows the percentage of smokers who want to quit smoking “a lot.” Overall, 38 percent of smokers indicate a strong desire to quit, across income groups.

**Exhibit 6-62. Percentage of Adult Current Smokers Who are Planning to Quit Smoking Within the Next 30 Days and Who Are Seriously Considering Quitting Smoking Within the Next 6 Months, CPS-TUS 1992–2002**



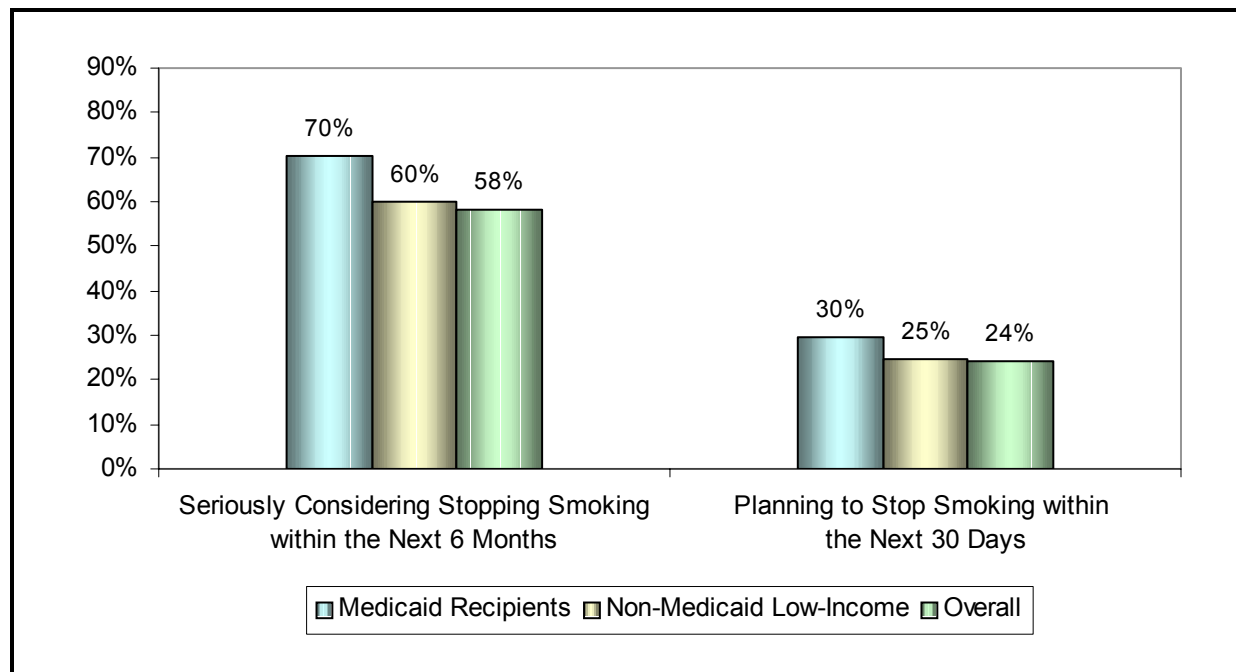
**Exhibit 6-63. Percentage of Current Smokers Who Want to Quit Smoking “A Lot,” ATS Q3 2003–Q2 2004**





Consistent with the results from the CPS, fewer individuals are seriously considering quitting in the next 30 days (25 to 30 percent) than in the next 6 months (60 to 70 percent) (**Exhibit 6-64**). A higher percentage of Medicaid recipients are considering stopping smoking within the next 6 months and within the next 30 days.

**Exhibit 6-64. Percentage of Current Smokers on Medicaid Who Are Planning to Quit Smoking Within 6 Months and Within 30 Days, ATS Q3 2003–Q2 2004**

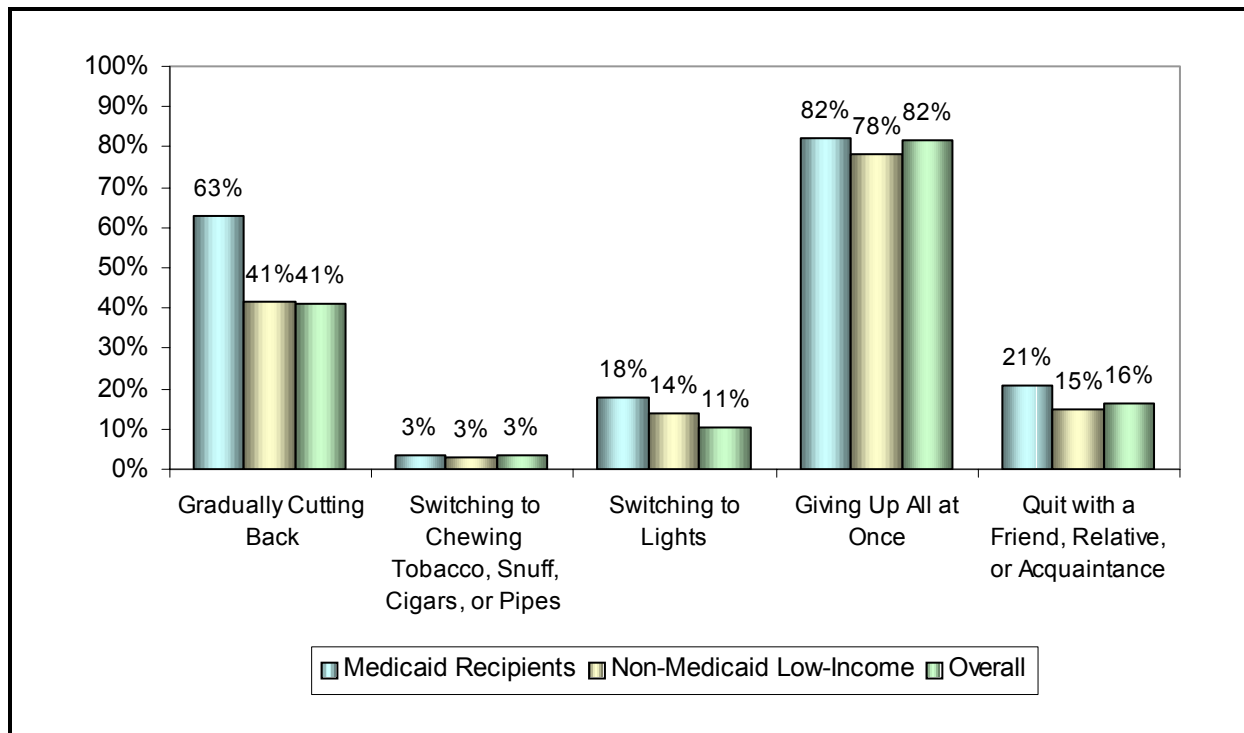


**Methods or Strategies Used in Quit Attempts.** The NYTCP promotes specific cessation strategies for smokers (e.g., the Quitline and NRT). Over time, we would expect to see an increase in the use of various cessation services and products resulting from an increased awareness of the effective strategies available to help smokers quit.

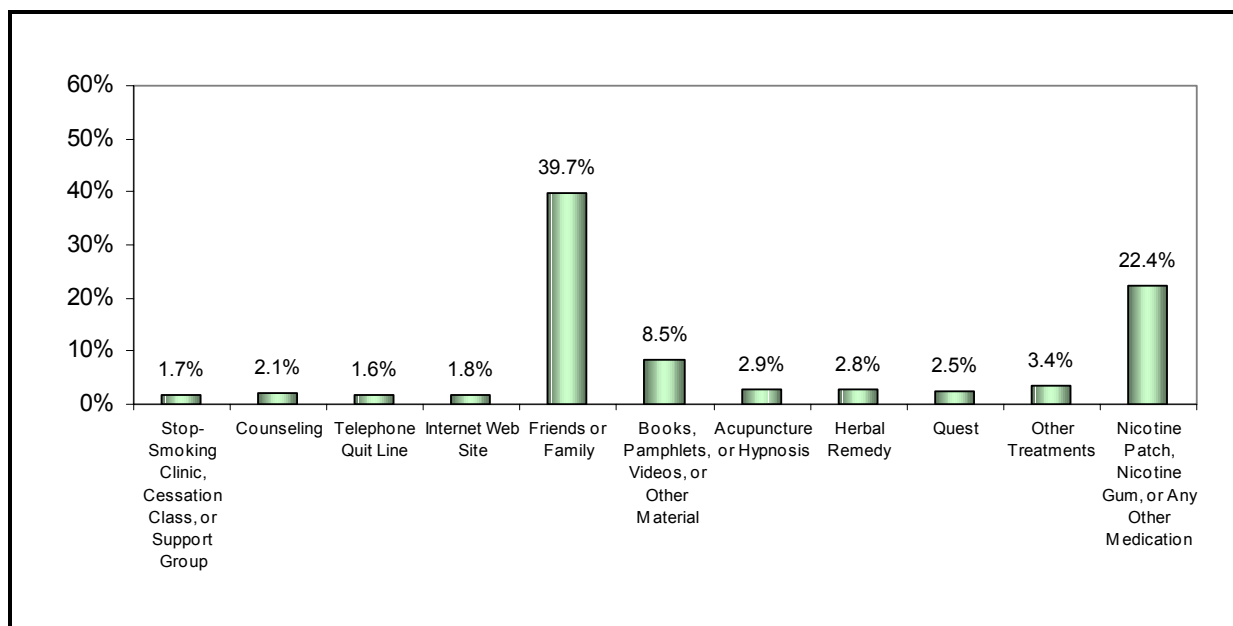
The ATS asks current smokers who have tried to quit and former smokers three related questions. The first asks smokers what “methods or strategies” they used (i.e., quitting all at once [cold turkey], quitting with a friend, gradually cutting back, or switching to light cigarettes or other tobacco products); the second asks smokers if they used the nicotine patch, nicotine gum, or any other medication to help quit; and

the third asks what other types of assistance they sought out (i.e., cessation class or support group; counseling; telephone Quitline; Internet site; books, pamphlets, videos, or other materials; acupuncture or hypnosis; herbal remedies; and/or friends and family). Responses to the first question are presented in **Exhibit 6-65**, and responses to the second and third questions are presented in **Exhibit 6-66**. The most common cessation strategy reported by approximately 80 percent of current and former smokers from June 2003 to June 2004 was giving up smoking all at once or “cold turkey.” Other common strategies included gradually cutting back (63 percent), quitting with a friend (16 percent), and switching to light cigarettes (11 percent) or other tobacco products (3 percent) (Exhibit 6-65).

**Exhibit 6-65. Percentage of Smokers Who Report Using Various Cessation Methods or Strategies, Among Current and Former Smokers Who Made a Quit Attempt in the Past Year, ATS Q3 2003–Q2 2004**



**Exhibit 6-66. Methods Used by Former and Current Smokers Who Quit or Made a Quit Attempt in the Past 12 Months—Overall, ATS Q3 2003–Q2 2004**



Significantly more Medicaid recipients report gradually cutting back as a cessation strategy than other New York smokers and former smokers (63 percent compared to approximately 41 percent). This result points to a lack of information or some other barriers that prevent smokers from choosing the most effective cessation strategies.

Exhibit 6-66 shows the percentage of current and former smokers who have used various aids to help them quit. Approximately 22 percent of smokers and former smokers report using NRT, such as a nicotine patch, nicotine gum, or some other medication as a cessation aid. About 40 percent cite help or support from friends and family.

About 9 percent used books, pamphlets, videos, or other materials. Other methods were used by about 2 to 3 percent of smokers and former smokers. There were no differences in cessation methods by income group. The low percentages reported for specific cessation methods (e.g., 1.4 percent for counseling, 2.5 percent for the Quitline) suggest that much more needs to be done to promote the use of the strategies that are likely to be the most effective.

**Discussion—Cessation Behaviors**

Overall, during the first 2 years of the program (2000–2002), cessation behaviors did not differ between New York and the remaining United States—the percentage of smokers who made a quit attempt and the percentage who quit for at least 6 months in the past year followed a similar pattern in New York and the rest of the United States from 1992–2002. However, the percentage of smokers who intend to quit in the next 30 days was higher in New York after 2000 than in the rest of the United States. Cigarette excise taxes appear to explain the differences between New York and the remaining United States.

Consistent with the published literature, data from the CPS and ATS show that many smokers have a great interest in quitting:

- Thirty-eight percent of smokers say they want to quit smoking “a lot.”
- Nearly 6 in 10 current smokers are seriously considering quitting in the next 6 months, and roughly 1 in 4 smokers say they plan to quit in the next month.
- Forty-six percent of smokers made at least one quit attempt in the past year according to the 2003–2004 ATS.
- Although nearly half of smokers tried to quit in the past year, only 2 percent of smokers are able to stay quit for a year or more.

These statistics illustrate the struggle that smokers have with their addiction and highlight the need for consistent and comprehensive support for cessation. In addition, the strategies used for quitting point to a lack of understanding or other barriers to using effective methods for quitting. For example, 11 percent of smokers said that they tried switching to light cigarettes as a method for quitting and 41 percent tried to gradually cut back. Although 22 percent have tried NRT, only 1 to 2 percent have used counseling (2.1 percent), a Quitline (1.6 percent), or a stop smoking clinic (1.7 percent) as an aid to cessation. Common aids to cessation include friends/family (45 percent), NRT (22 percent), and books or pamphlets (9 percent).

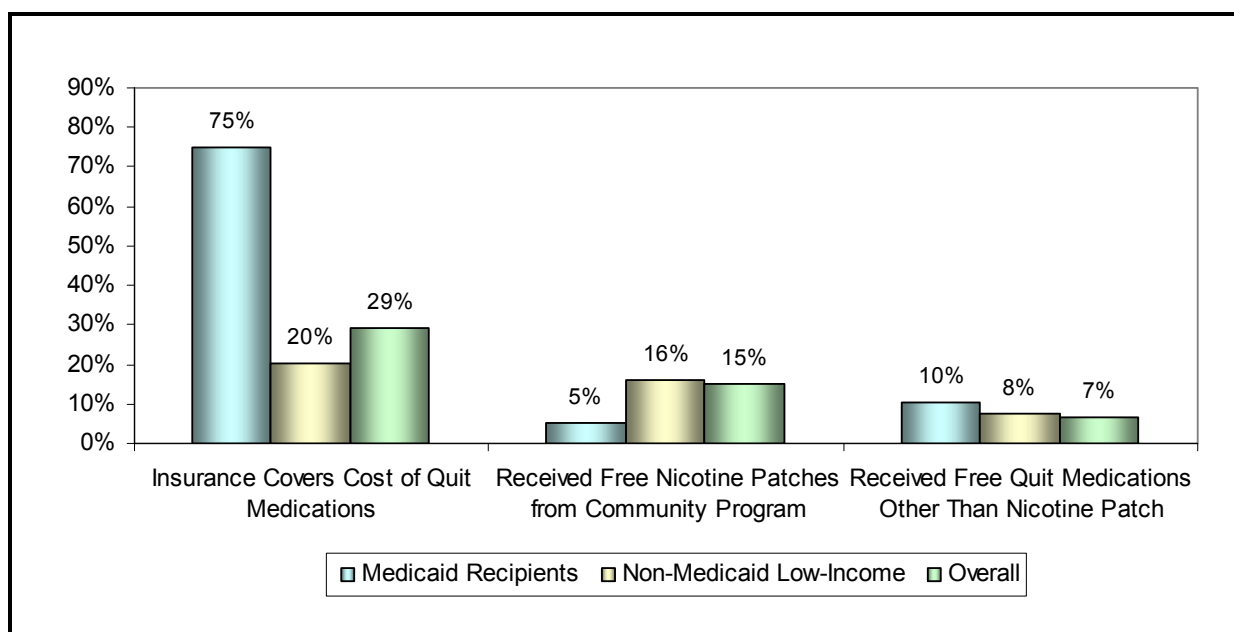
Switching to light cigarettes is not a recommended cessation strategy (IOM, 2001). Counseling, NRT, and social support can

be effective strategies (Tobacco Use and Dependence Clinical Practice Guideline Panel, 2000; Fiore, Hatsukami, and Baker, 2002; Gomez-Zamudio et al., 2004). The program should continue to promote the evidence-based strategies for cessation and identify and overcome the barriers to the use of these effective strategies.

### **Results—Support for Cessation**

**Insurance Coverage and Free NRT.** An objective of the NYTCP is to increase access to insurance coverage for cessation medication and services and free NRT. **Exhibit 6-67** uses data from the ATS to assess adults' reports of insurance coverage for NRT and access to free NRT (the ATS asks separately about receiving "free nicotine patches" or "free quit medications" from "community programs").

**Exhibit 6-67. Percentage of Adults with Insurance Coverage and Free Quit Medication, ATS Q3 2003–Q2 2004**



Almost 75 percent of Medicaid recipients reported that their insurance covered the cost of quit medications compared to 20 percent for non-Medicaid eligible low-income smokers and 30 percent of all smokers. Approximately 5 percent of Medicaid recipients report receiving free patches from programs in their community. Among all adult smokers, approximately

15 percent reported receiving free patches from programs in their community. Ten percent of Medicaid recipients and 7 percent of adult smokers overall reported receiving free quit medications other than nicotine patches.

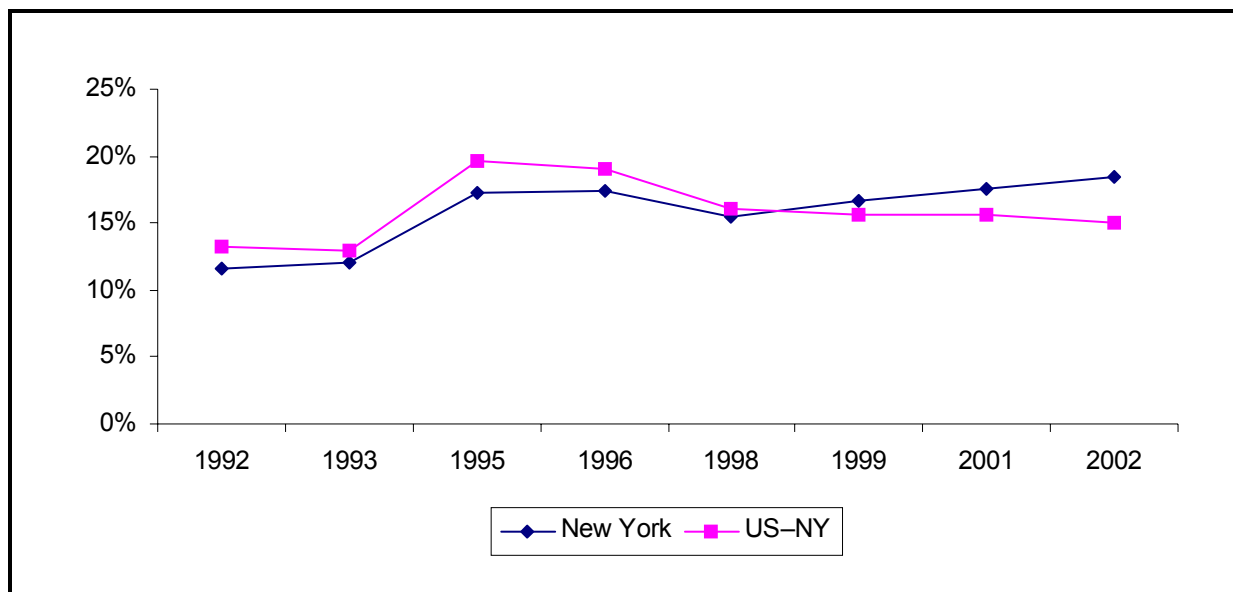
Data from the Office of Medicaid Management show that claims and expenditures related to coverage of NRT and Zyban increased steadily from implementation in 1999 to year 2002/03 and then declined (**Exhibit 6-68**). Understanding the cause of the recent drop in utilization will be important given Medicaid smokers' desires to quit and difficulty in sustaining quit attempts.

**Exhibit 6-68. Medicaid Claims Paid for the Utilization of Prescription and Over-the-Counter Smoking Cessation Products: New York State Office of Medicaid Management**

Time Period	4/1999– 3/2000 <sup>a</sup>	4/2000– 3/2001	4/2001– 3/2002	4/2002– 3/2003	4/2003– 3/2004
Total dollars spent	\$652,107	\$5,138,892	\$6,334,468	\$9,290,029	\$8,927,003
Total number of claims	7,903	60,840	72,818	98,974	83,389
Total recipients (male and female, all ages)	5,549	30,866	39,029	51,019	40,658
Total recipients (male and female, age 19+ yrs)	5,499	30,621	38,671	50,515	40,150
Total Medicaid eligible adult recipients age 19+ yrs	2,915,507	1,901,769	2,195,950	2,445,191	2,727,225
Dollars per recipient	\$117.52	\$166.49	\$162.30	\$182.09	\$219.56
Ratio tobacco recipients/total Medicaid eligible (19+yrs) × 100	0.19	1.61	1.76	2.07	1.47

<sup>a</sup>Medicaid began paying for prescription tobacco dependence treatment medications in October 1999 and over-the-counter NRT on February 15, 2000.

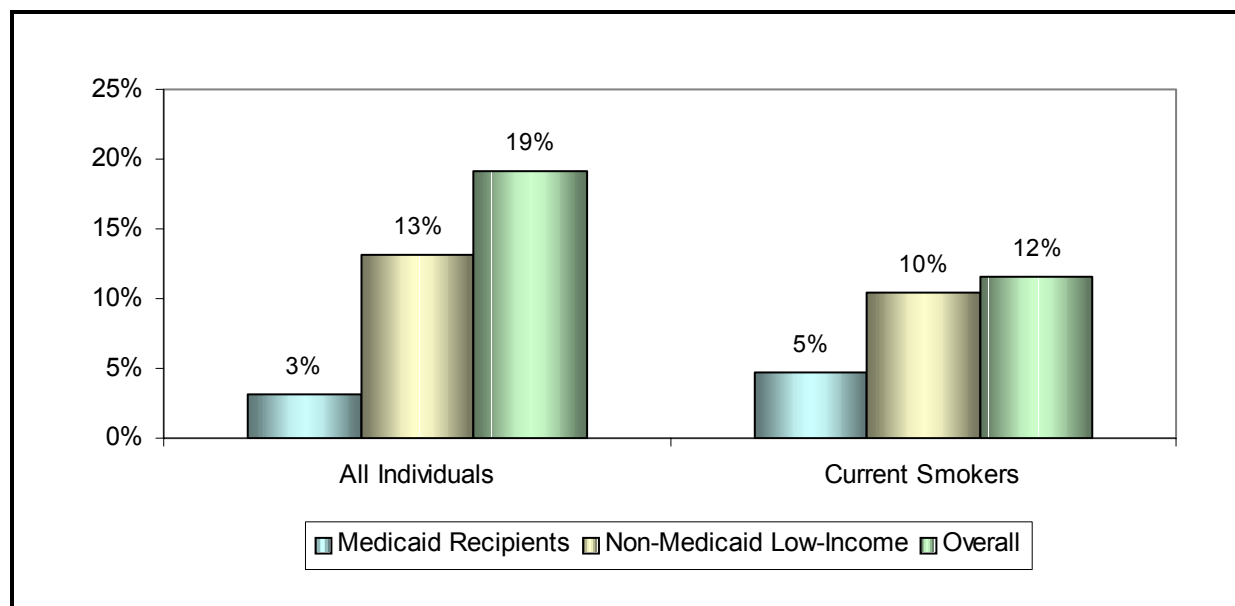
**Employer Cessation Programs.** Both the CPS and the ATS have a question that is related to employer support for cessation. **Exhibit 6-69** presents the trends for New York and the remaining United States for the percentage of adults reporting that their employer has offered a smoking cessation program in the past 12 months, which are higher in New York than in the remaining United States. Also, since 1998, this percentage has risen in New York but fallen in the remaining United States. Results of the multiple regression models for

**Exhibit 6-69. Percentage of Adults Reporting That Their Employer Offered a Smoking Cessation Program in the Past 12 Months, CPS 1992–2002**

this outcome confirm what we observe in the simple descriptive trends. There is a significant increase in the level of the outcome post-2000 (compared to the pre-2000 period), and the level post-2000 is higher in New York than in the rest of the United States.

The question in the ATS related to employer-sponsored cessation help is broader than the CPS question—it asks about “any other help” in addition to a cessation program, whereas the CPS asks about a cessation program only. Overall, approximately 20 percent of adults who are employed for wages have employers who help employees who want to quit smoking (**Exhibit 6-70**). Among current smokers employed for wages, only 12 percent report access to such a benefit. The percentages are lower for low-income individuals and substantially lower for Medicaid recipients. As might be expected, jobs for lower income workers have fewer benefits such as a smoking cessation program. However, across all groups, relatively few individuals report that employers offer such programs.

**Exhibit 6-70. Percentage of Adults Who Are Employed for Wages and Whose Employer Offered Any Stop Smoking Program or Any Other Help to Employees Who Want To Quit Smoking, ATS Q3 2003–Q2 2004**



### ***Discussion—Support for Cessation***

In this section, we have presented results that speak to support for cessation other than the Quitline (discussed below). In particular, we have focused on insurance coverage for NRT and other cessation services and employer support for cessation services for employees. An encouraging finding is that a substantial percentage of Medicaid recipients report insurance coverage of quit medications indicating high awareness of this covered benefit. Overall, far fewer adults report insurance coverage for quit medications pointing to an opportunity for the program to promote insurance coverage of cessation services and medications. Although it appears that New York is doing at least as well as the rest of the United States in terms of employers providing employees with support for smoking cessation, the levels are still low. In addition, the level of such employer support appears to decrease at lower income levels. These results again point to an opportunity for the program to increase support for cessation via increased employer support for employee smoking cessation.



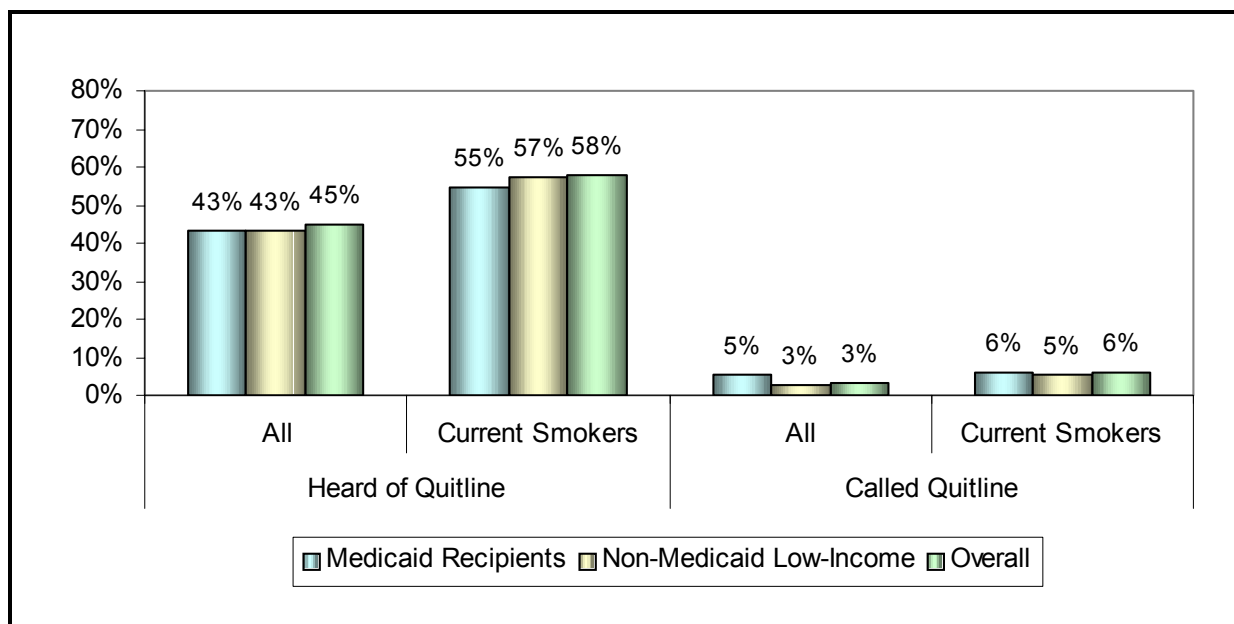
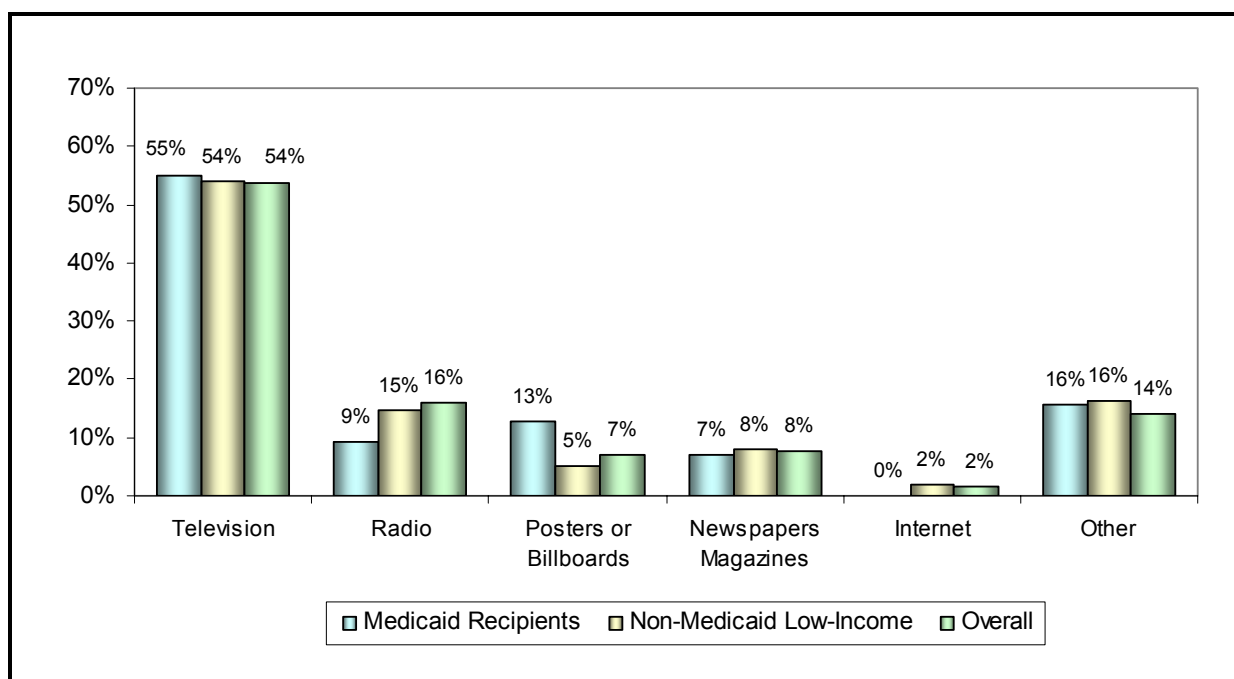
**Results—Awareness and Use of Quitline and Awareness of Cessation Media Messages**

**Awareness and Use of Quitline.** *Exhibit 6-71* presents the percentage of adults who are aware of and have used the Quitline, based on data from the ATS. Overall, 43 percent of adults are aware of the Quitline, including 58 percent of all adult smokers. Only 6 percent of smokers and 3 percent of adults have ever called the Quitline, or 178,022 smokers and 258,306 nonsmokers. Television was cited as the most common source (approximately 55 percent of smokers) of information about the Quitline (*Exhibit 6-72*). Smokers cited radio (16 percent), Newspapers and magazines (8 percent), and the Internet (2 percent) as other specific sources of Quitline information.

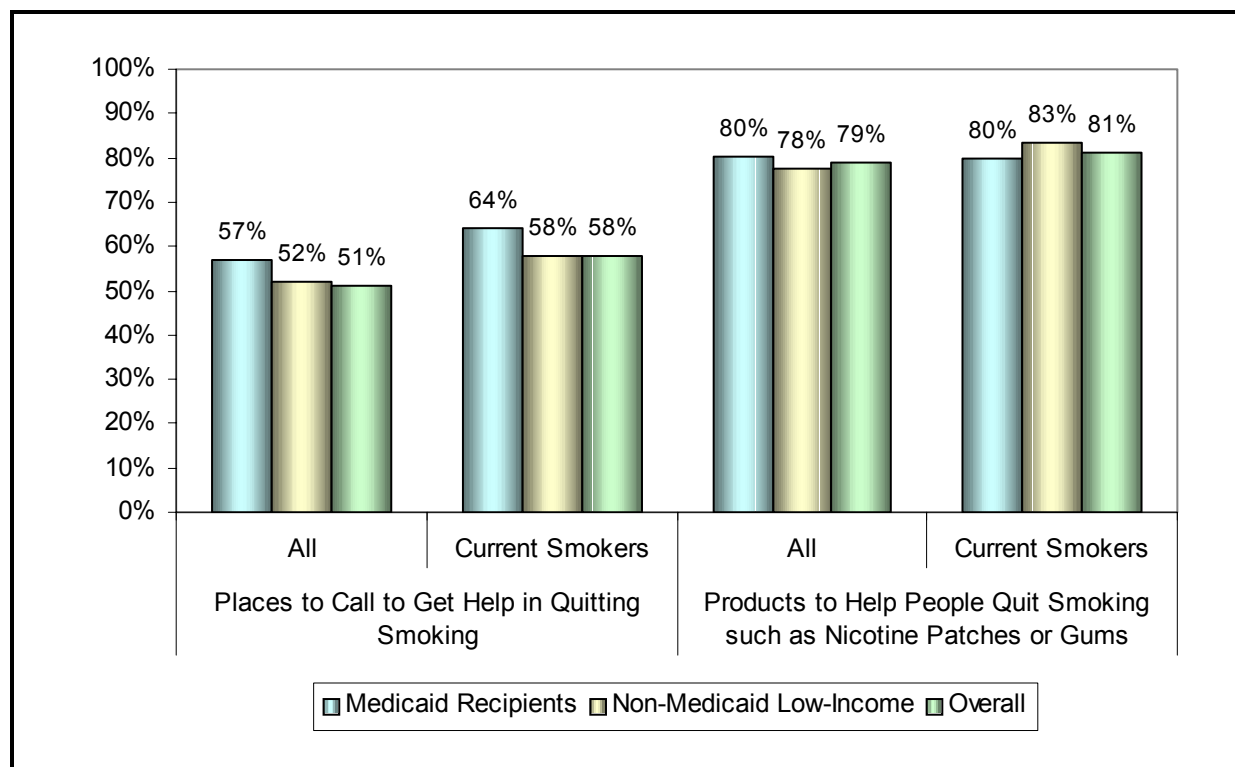
**Awareness of Cessation Media Messages.** The NYTCP has invested heavily in paid advertising to promote the Quitline and motivate smokers to try to quit smoking. *Exhibit 6-73* presents awareness of media messages about places to call for help in quitting and pharmaceutical products to help people quit smoking. It appears that awareness is higher for messages that convey information about cessation products than about places to call to get help in quitting.

**Discussion—Awareness and Use of Quitline and Awareness of Cessation Media Messages**

Findings in this section indicate that there are ample opportunities to more aggressively promote awareness and use of the Quitline with 4 in 10 smokers indicating that they were not aware of it. However, our findings also suggest with 6 percent of smokers and 3 percent adults having ever called the Quitline that the Quitline is near its current capacity, which was recently increased with additional state (\$700,000) and federal (\$300,000) funds. In addition, the program has invested additional funds to provide NRT to increase the success of quit attempts. With finite program resources, the program has a choice between increasing Quitline capacity or increasing the effectiveness of quit attempts. To reach and serve additional Quitline callers and to support them with NRT will require additional program resources.

**Exhibit 6-71. Percentage of Adults Who Have Heard About or Called the New York State Quitline, ATS Q3 2003–Q2 2004****Exhibit 6-72. Where Current Smokers Have Heard About the New York State Quitline, ATS Q3 2003–Q2 2004**

**Exhibit 6-73. Percentage of Individuals Who Have Seen or Heard Advertisements About Cessation Services or Products, ATS Q3 2003–Q2 2004**

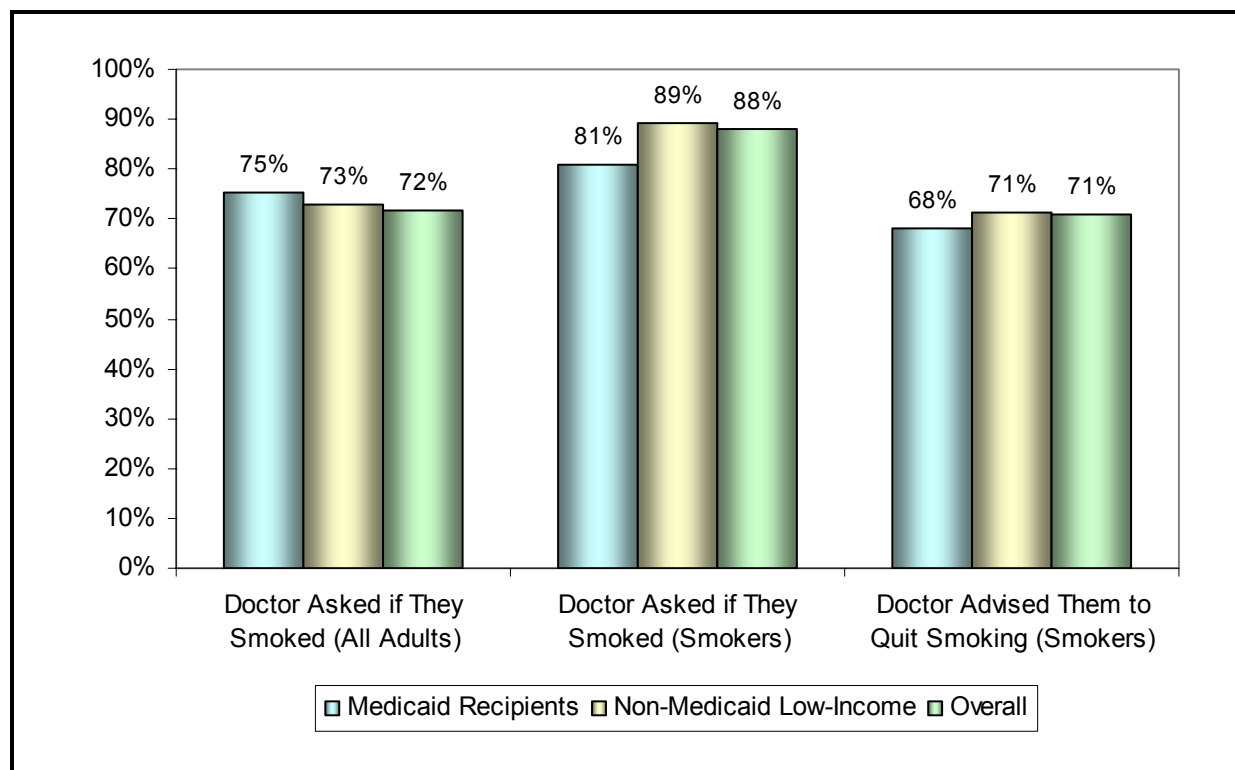


### ***Health Care Provider Assistance in Cessation***

An objective of the NYTCP is to increase the number of health care provider organizations that have a system in place to implement the Preventive Services Task Force clinical guideline for cessation. This and other efforts are also intended to increase the number of health care providers who follow guidelines for diagnosing and treating tobacco dependence. The ATS contains a series of items that ask, for those who visited a health care provider in the past year, whether they were asked about tobacco use and given advice to stop using tobacco.

**Results.** Among the 78 percent of adults (82 percent of nonsmokers and 62 percent of smokers) who reported visiting a health care provider in the past 12 months, 72 percent of adults and 88 percent of smokers were asked if they used tobacco (**Exhibit 6-74**). Among smokers, 71 percent of smokers reported being advised to quit.

**Exhibit 6-74. Percentage of Adults Who Received Consultation from Health Care Professionals Among Those Who Saw a Doctor, Nurse, or Other Health Professional to Get Any Kind of Care, ATS Q3 2003–Q2 2004**



**Discussion.** Our results indicate that overall, only 44 percent of smokers were advised to quite smoking by an HCP in the past year (62 percent multiplied by 71 percent). Fortunately, the NYTCP has plans in place through the 19 Cessation Centers to promote the provision of advice to quit among health care providers to address this shortfall. These statistics can serve as a benchmark against which to measure progress in encouraging health care providers to provide additional support to smokers' cessation efforts.

### **Conclusions and Next Steps**

In this section, we have focused on establishing baseline levels of key cessation outcomes. In future reports, we will examine the association between indicators of program efforts and these indicators of program outcomes.

The following is a summary of the key findings from the CPS and ATS presented in this section:

- Approximately 46 percent of smokers made a quit attempt in the past year, but fewer than 14 percent maintained a quit attempt for 6 months or more.
- Fifty-eight percent of smokers plan to quit in the next 6 months, including 24 percent of smokers who plan to quit in the next 30 days.
- Although more Medicaid recipients report having made a quit attempt in the past 12 months than non-Medicaid eligible poor adults and all smokers, Medicaid recipients were less successful in maintaining quit attempts.
- Twenty-two percent reported using nicotine patch, nicotine gum, or some other medication as a cessation method—an evidence-based strategy.
- Many smokers used methods for quitting that are not evidence-based unless paired with counseling or NRT:
  - More than 8 in 10 smokers and former smokers reported quitting all at once as a cessation strategy.
  - Eleven percent reported switching to light cigarettes.
  - Forty-one percent reported cutting back.
- Three of four Medicaid recipients report insurance coverage of quit medications, indicating high awareness of this covered benefit. Overall and for the non-Medicaid eligible low-income adults, less than one-third report having insurance coverage for free nicotine patches or quit medications.
- Approximately 15 percent of all smokers and 5 percent of Medicaid smokers reported receiving free nicotine patches from community programs.
- From 1992 to 2002, most cessation indicators were similar in New York and the remaining United States.
- For the period 2000 to 2002, more New York adults reported that their employer offered a smoking cessation program than adults in the rest of the United States. However, overall percentages were low.
- Approximately 57 percent of current smokers and approximately 45 percent of all adults have heard of the New York Quitline. Use of the Quitline is considerably lower (in the 3 to 6 percent range). Television is the most common medium through which adults have heard of the Quitline.
- More than 50 percent of adults have seen or heard advertisements about places to call to get help quitting smoking.

- Seventy-one percent of smokers who had visited a doctor, nurse, or other health professional in the past year reported that the health provider advised them to quit. Because only 62 percent of smokers visited a health provider in the past year, this translates to only 44 percent of smokers being advised to quit.

Several results point to specific areas that need improvement if cessation objectives and goals are to be reached. For example, maintained quit attempts were significantly lower than the number of quit attempts—hardly surprising. However, it was also evident that substantial numbers of New York smokers are using cessation strategies that are not optimal or even counterproductive (e.g., switching to lights). Over time, we will look to program efforts to expand the availability of free or low cost NRT to the population and to better inform the population about effective cessation strategies through media messages, the Quitline, and Community Partners. Also, Medicaid recipients were less likely to be successful at maintaining a cessation attempt than other adults. This result is of importance since smoking rates are higher in lower-income populations. There is also still a need to continue efforts to increase the use of NRT, increase awareness of cessation-related media messages, increase insurance coverage for NRT, and increase employer support for cessation services for employees.

The program has invested in multiple evidence-based strategies to promote cessation. None of the findings in this section suggest that the program's current cessation efforts need to be reconsidered. They do, however, suggest that if the program is to serve additional smokers via the Quitline (beyond 6 percent of smokers) and increase the effectiveness of smokers' quit attempts with NRT, it will need additional resources. We also found that less than half of smokers were advised by a health care provider to quit. This finding validates the program's investments in the 19 Cessation Centers that will promote the adoption of reminder and other systems within health care provider organizations designed to encourage providers to more consistently support smokers' efforts to quit by providing cessation advice and assistance. In future reports, we will assess changes in specific indicators of program progress to

assess whether any adjustments in the current program strategy are warranted.

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## **6.6 GOAL 4: PREVENT THE INITIATION OF TOBACCO USE AMONG YOUTH AND YOUNG ADULTS**

### **6.6.1 Overview**

Goal 4 of the NYTCP is to prevent the initiation of smoking among youth and young adults. Specific objectives that have been identified to achieve this goal include raising the price of cigarettes through statewide and local cigarette tax increases, increasing statewide retailer compliance rate with the Adolescent Tobacco Use and Prevention Act (ATUPA) youth access law, and increasing the number of jurisdictions with a high ATUPA compliance rate. These specific objectives are not the only way the NYTCP will affect youth smoking. In general, the NYTCP takes a social norm change approach to youth smoking, seeking to influence community and adult norms, which then affect youth smoking. Thus, eliminating exposure to secondhand smoke (goal 1), decreasing the social acceptability of tobacco use (goal 2), and promoting smoking cessation (goal 3) all encourage the adoption of negative attitudes toward tobacco, denormalize tobacco use, and contribute to the prevention and reduction of tobacco use among youth and adults. In this chapter, we present data on the current state of youth smoking in New York and factors potentially associated with youth smoking. Where data are available, we compare New York with the rest of the United States.

### **6.6.2 Methods**

To provide an understanding of how youth smoking has been changing in recent years, we present trends in youth smoking in New York and the remaining United States. During times when youth smoking rates are declining, this comparison can indicate whether youth smoking is declining faster in New York than the average state. The data sources used for this analysis are the New York YTS and the National Youth Tobacco Surveys (NYTS) conducted in 2000 and 2002. These surveys are described in more detail in Chapter 5.

Following the examination of trends, we present results on several factors that have the potential to influence youth smoking rates:

- Youth access to tobacco products
- Self-reported cigarette prices
- Exposure to school-based tobacco use prevention education programs
- Participation in community-based programs
- Awareness of antitobacco advertising on television and radio

### **6.6.3 Results**

**Exhibit 6-75** shows the prevalence of current smoking, lifetime smoking, and frequent smoking among middle school and high school students in New York and the rest of the United States. In both 2000 and 2002, the prevalence of current smoking among youth was similar in New York and the rest of the United States.

Research on health behavior change suggests that changes in attitudes and intentions often precede actual behavior change. Using data from the NYYS and the NYTS, **Exhibit 6-76** shows the proportion of high school students who have never smoked and are not open to trying smoking. Increasing the size of this group is important because they are the least likely to experiment with cigarettes and subsequently progress to regular smoking. The figure shows that New York has a similar proportion of youth who are not open to smoking compared to the rest of the United States (the differences between New York and the rest of the United States are not statistically significant).

#### ***Factors Potentially Associated with Youth Smoking***

**Youth Access to Tobacco.** Since 1997, when New York passed the ATUPA, the state has conducted annual compliance checks of all registered tobacco retailers involving underage buyers and imposing fines for offenders. The law is intended to reduce youth access to tobacco products in an effort to reduce youth tobacco use.



**Exhibit 6-75. Smoking Behaviors Among Youth in New York and the Rest of the United States, 2000 and 2002 YTS and NYTS (95 Percent Confidence Intervals)**

Behavior	New York		Rest of the United States	
	2000	2002	2000	2002
Current Smoking <sup>a</sup>				
Middle School	10.1% (6.7, 13.5)	6.7% (4.2, 9.2)	11.1% (9.7, 12.4)	9.9% (8.6, 11.3)
High School	27.4% (22.6, 32.3)	21.3% (18.5, 24.1)	28.1% (26.3, 30.0)	22.6% (20.7, 24.5)
Lifetime Smoking <sup>b</sup>				
Middle School	31.7% (26.1, 37.3)	28.6% (19.9, 37.3)	36.7% (34.1, 39.4)	33.8% (31.3, 36.2)
High School	70.0 (58.0, 66.0)	56.9 (53.6, 60.2)	64.0 (61.9, 66.2)	57.5 (55.0, 59.9)
Frequent Smoking <sup>c</sup>				
Middle School	2.9% (1.5, 4.3)	2.1% (0.6, 3.6)	2.8% (2.2, 3.3)	2.4% (1.9, 3.0)
High School	14.3% (10.5, 18.1)	11.2% (8.7, 13.7)	13.5% (12.2, 14.9)	11.1% (9.6, 12.5)

Note: Differences between New York and the rest of the United States are not statistically significant.

<sup>a</sup>Use of cigarettes at least 1 day in the past 30 days.

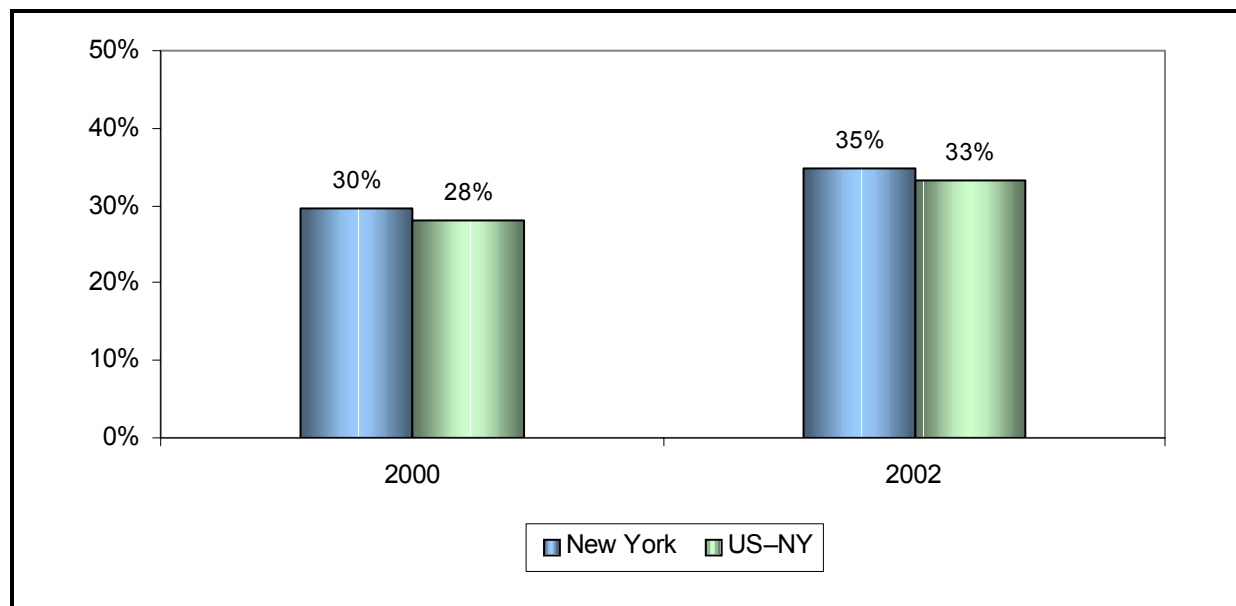
<sup>b</sup>Ever tried smoking a cigarette, even one or two puffs.

<sup>c</sup>Smoked on 20 or more days in the past 30 days.

In this overview, we have shown that New York is similar to the rest of the United States in terms of prevalence of smoking among youth, change in youth smoking over time, and openness to smoking. This is a baseline from which the evaluation will seek to measure improvement in the years ahead.

We compared the following questions about youth access to cigarettes from the YTS:

- "When you tried to buy cigarettes in a store during the past 30 days, were you ever asked for proof of age?"
- "During the past 30 days, did anyone ever refuse to sell you cigarettes because of your age?"
- "During the past 30 days, how did you usually get your own cigarettes?"

**Exhibit 6-76. Percentage of High School Students Who Are Not Open to Smoking, 2000 and 2002 YTS and NYTS**

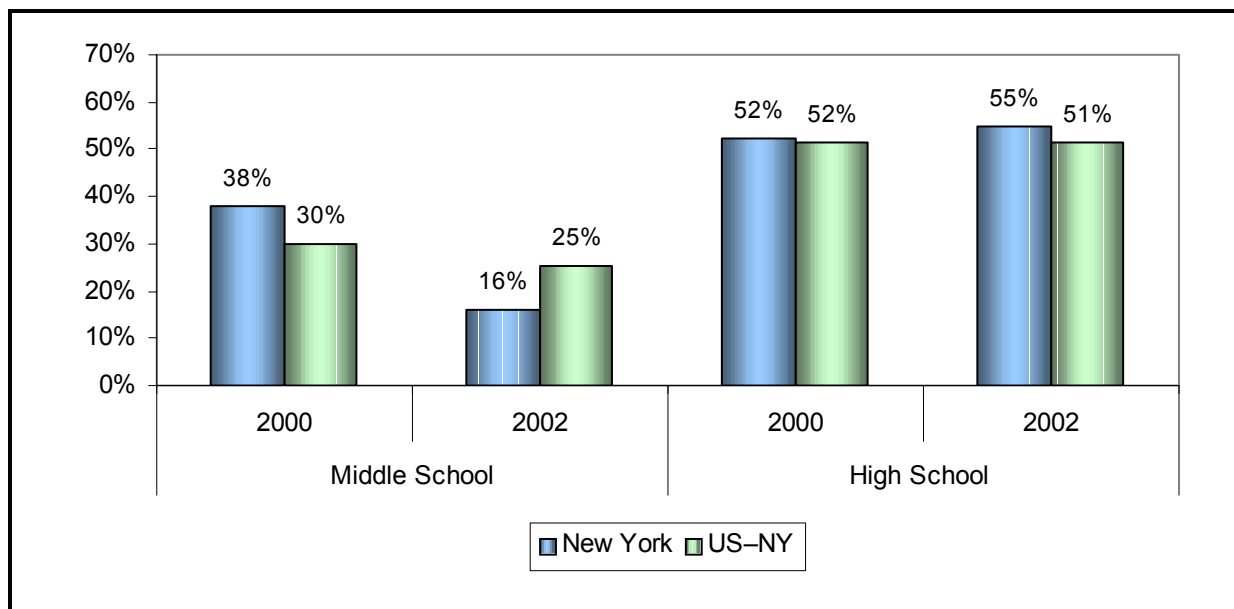
Responses to these questions give some insight into the ease with which youth can purchase cigarettes.

**Exhibit 6-77** shows the percentage of youth (current smokers) who were asked to show proof of age when attempting to purchase cigarettes. High school youth are asked to show ID significantly more often than middle school youth in both New York and the United States. Slightly more than half of all high school students report being asked for ID when attempting to purchase cigarettes, with no significant differences between New York and the rest of the United States.

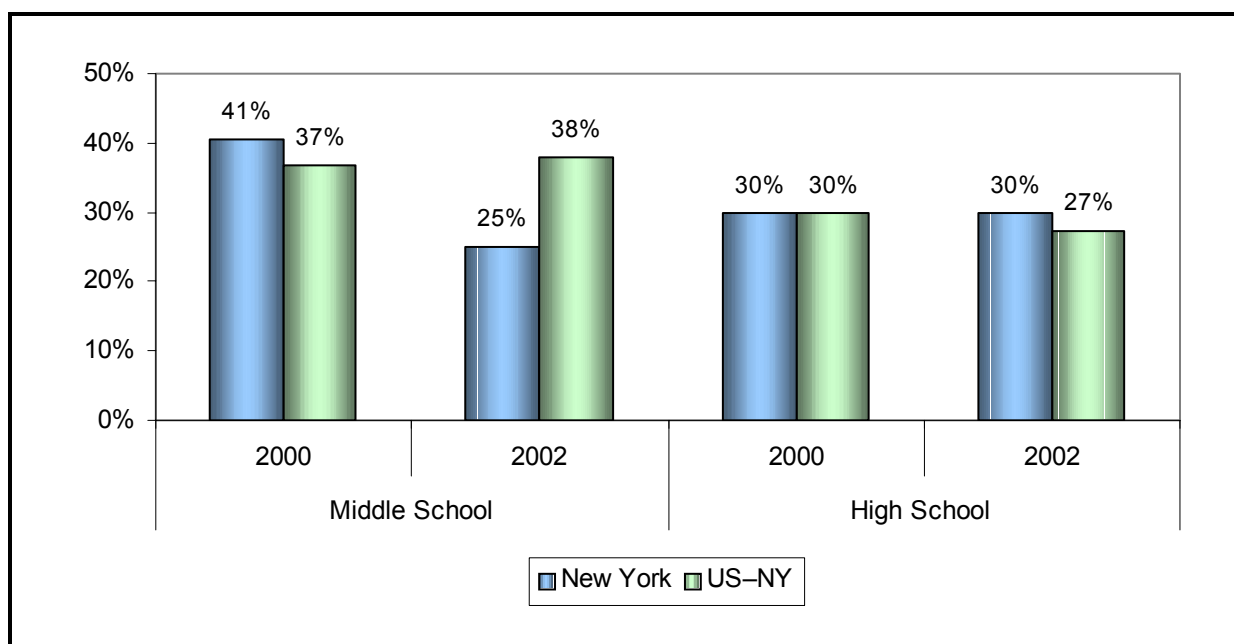
**Exhibit 6-78** reports the percentage of youth who were refused cigarettes because of age when attempting to purchase cigarettes. The only statistically significant difference is between middle and high school students in 2002 in the national sample.

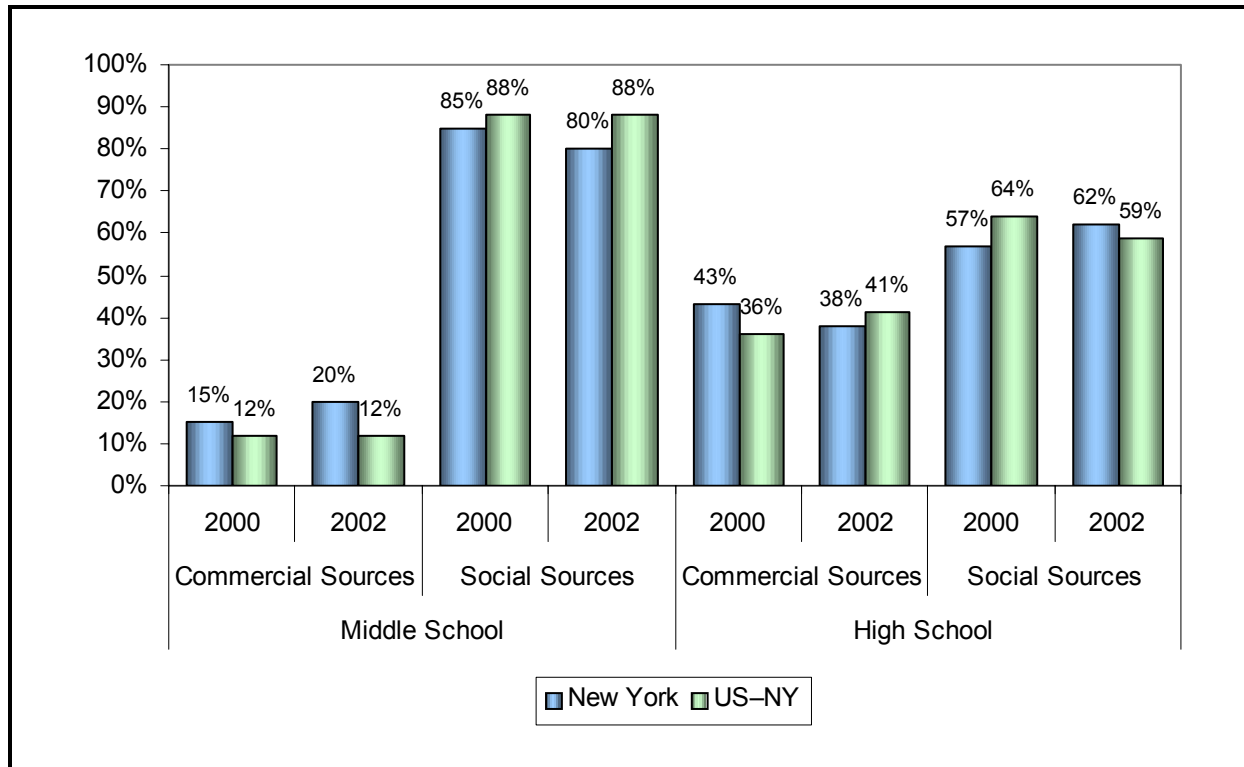
**Exhibit 6-79** shows the percentage of youth who obtain cigarettes from social (e.g., friends, relatives, older adults) and commercial (stores and vending machines) sources of cigarettes. Interestingly, between 2000 and 2002, the use of commercial sources actually increased for middle school

**Exhibit 6-77. Percentage of Youth Smokers Asked to Show Proof of Age When Purchasing Cigarettes, 2000 and 2002 YTS and NYTS**



**Exhibit 6-78. Percentage of Youth Refused Cigarettes Because of Age, 2000 and 2002 YTS and NYTS**



**Exhibit 6-79. Social and Commercial Sources of Cigarettes, 2000 and 2002 YTS and NYTS**

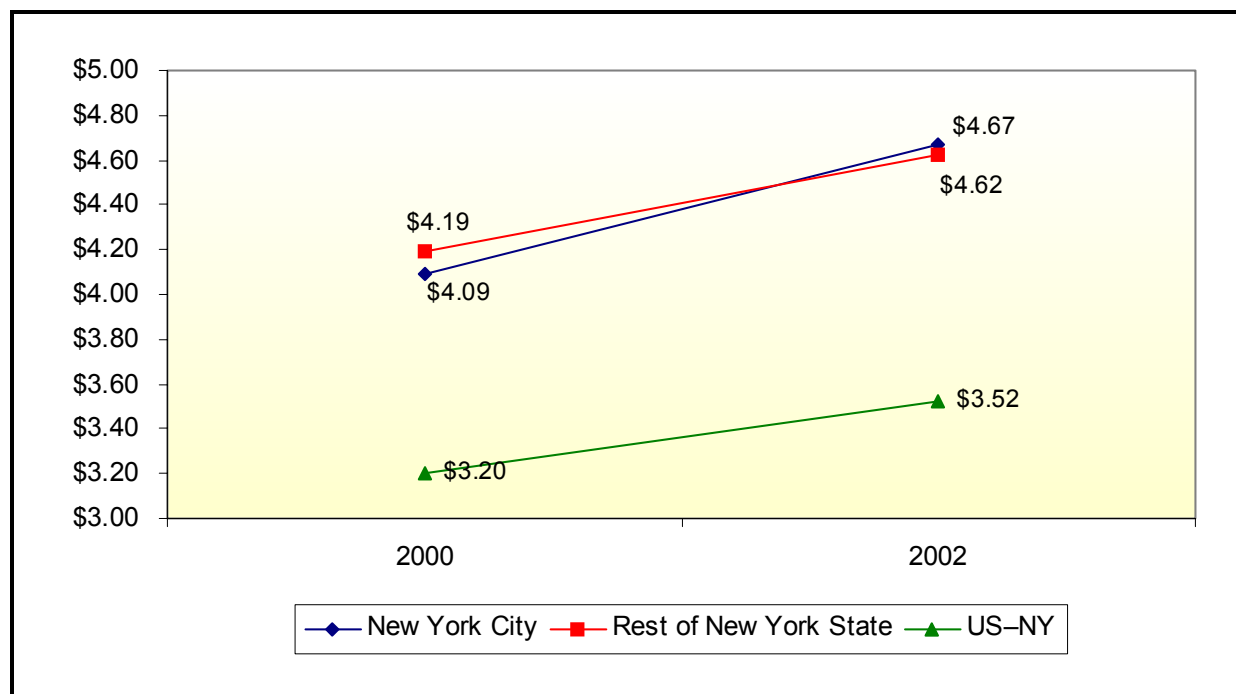
students in New York, with a corresponding decrease in reliance on social sources. The reverse was true of high school students, who report decreased use of commercial sources to obtain cigarettes. Compared with the rest of the United States, New York students use commercial sources more often on average, but the differences are not statistically significant.

**Cigarette Prices.** In the face of rising cigarette prices, young people reduce their cigarette consumption to a greater degree than do adults. Therefore, increasing cigarette prices, through higher cigarette excise taxes, can be an effective means of reducing youth smoking. New York increased its cigarette tax from \$0.56 to \$1.11 per pack on March 1, 2000, and increased it again to \$1.50 per pack on April 3, 2002. In July 2002, New York City raised its cigarette tax to \$1.50 a pack, for a combined state and city tax of \$3.00 in New York City. Because the increase was after the administration of the YTS, we would not expect to see significantly higher cigarette prices in New York City compared with the rest of the state at this

time. Nonetheless, we will continue to monitor differences in self-reported prices between New York City and the rest of the state as more data become available.

**Exhibit 6-80** shows average self-reported prices among high school students in New York City, the rest of New York, and the rest of the United States. High school students in New York City and state report paying much higher prices for cigarettes compared with high school students in the rest of the United States. Self-reported prices in the rest of the United States increased from an average of \$3.20 in 2000 to \$3.52 in 2002, a 10 percent increase. Comparatively, in New York, the average price increased from \$4.17 to \$4.63, an increase of 11 percent. In New York City, self-reported prices rose from \$4.09 to \$4.67, a 14 percent increase between 2000 and 2002.

**Exhibit 6-80. Average Self-Reported Cigarette Prices Among High School Students, 2000 and 2002 YTS and NYTS**

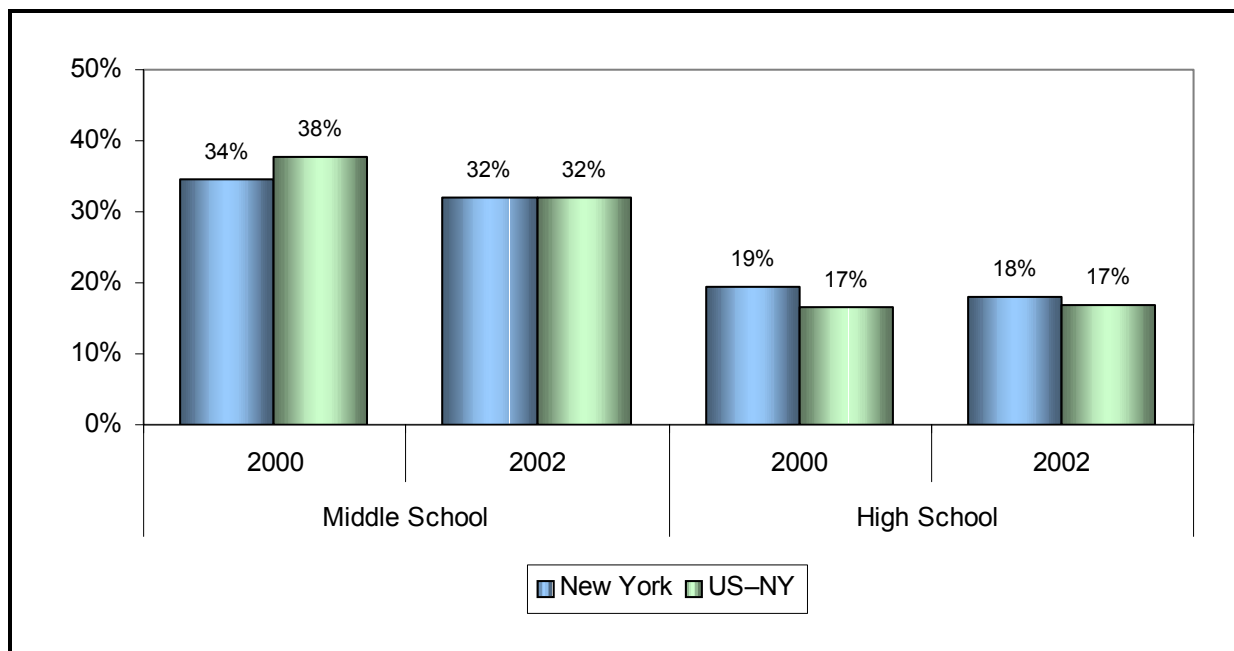


**School-Based Tobacco Use Prevention Education.** The tobacco control literature is mixed on the effectiveness of school-based tobacco use prevention programs, and the NYTCP does not support these programs to a large degree.

Nonetheless, because school-based programs do exist in New York, we decided to consider self-reported measures of exposure to them.

A multistrategy prevention program incorporates aspects of four research-based tobacco use prevention strategies: knowledge about the physical and social consequences of smoking; normative education concerning the true extent of peers' prevalence of tobacco use; understanding media, peer, and family influences to smoke; and training in life skills helpful in refusing offers to smoke (Wenter et al., 2002). Using the national and New York YTS, we created a measure of students' exposure to multistrategy prevention education programs in school that captures simultaneous exposure to at least three of the four main prevention strategies (**Exhibit 6-81**) in both New York and throughout the rest of the United States. On average, a higher proportion of students in New York report having prevention education, but the difference is not statistically significant.

**Exhibit 6-81. Percentage of Youth Who Received Multistrategy Prevention Education, 2000 and 2002 YTS and NYTS**



These results are not surprising given that the program has consistently invested well below the CDC minimum in school programs. In 2003, expenditures were at 22 percent of CDC's minimum recommended level. However, this may be appropriate in light of the mixed evidence for these programs and the stakeholders' disinterest in school efforts given the current evidence base.

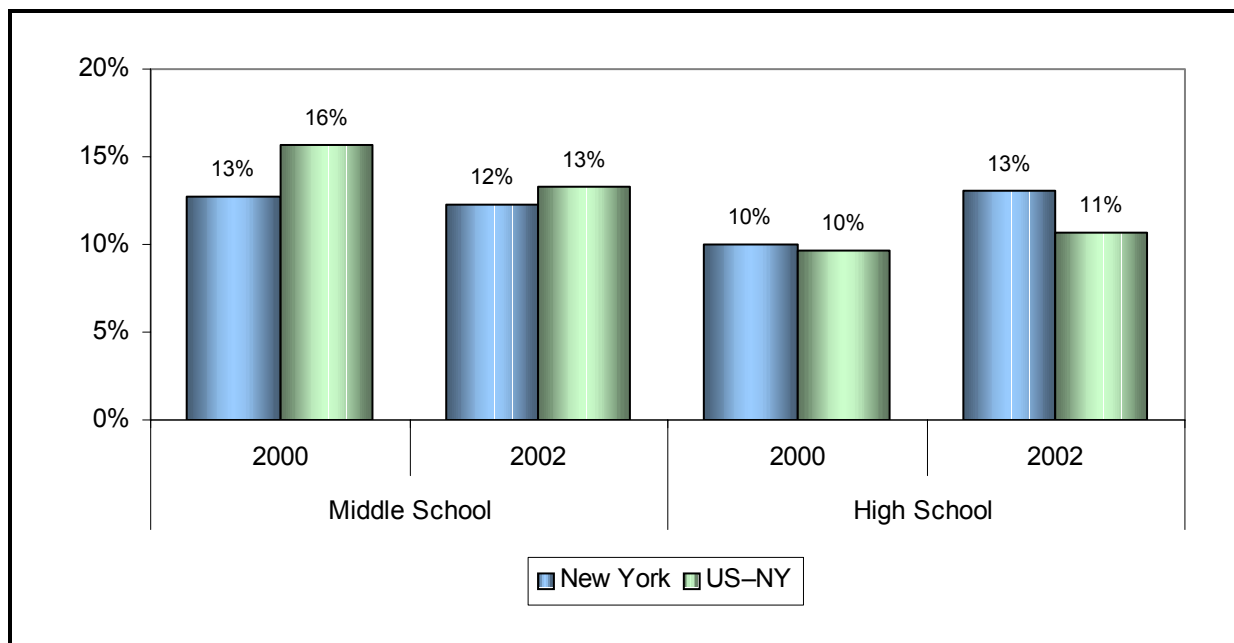
**Participation in Community-Based Antitobacco Events.**

New York has a history of including youth as part of the antitobacco action in the state. Most recently, in 2000, the American Legacy Foundation awarded New York a \$3 million grant over 3 years (2000–2003) to supplement \$5 million in annual state funding to start a grassroots statewide movement against tobacco, now known as "Reality Check." Similar grants were awarded to 17 states throughout the country. It should be noted that New York's Reality Check program is open to youth ages 13 to 18, which is somewhat older than the typical middle school student (who are ages 11 to 13).

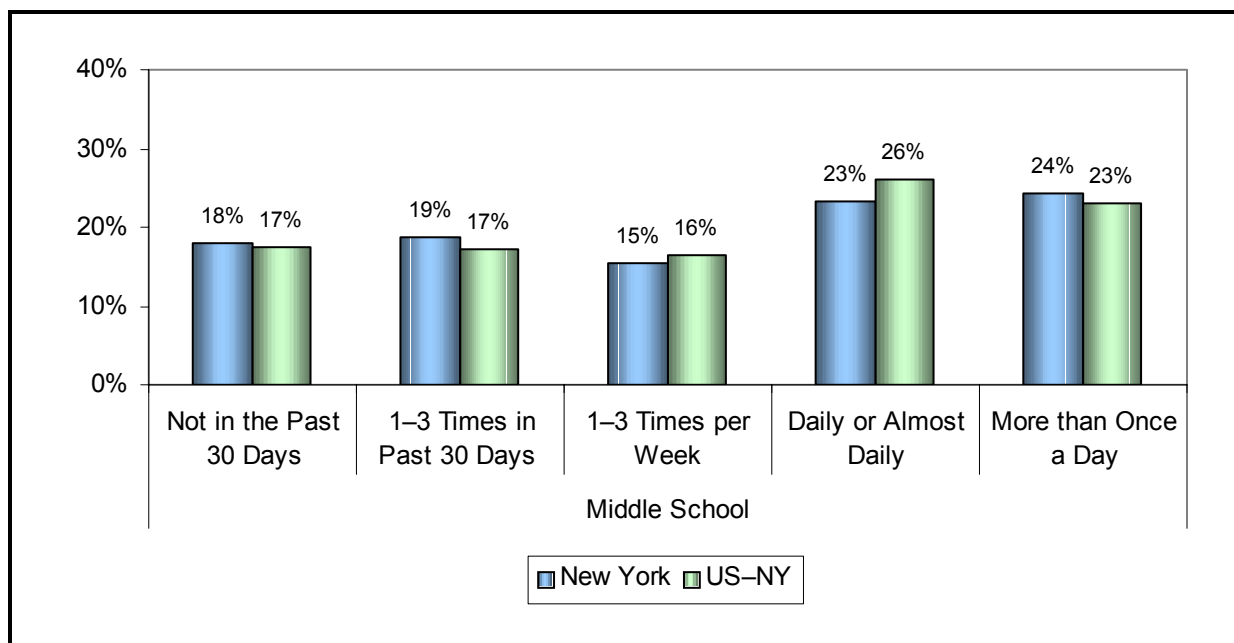
**Exhibit 6-82** shows the percentage of youth who report participating in a group or community program. Participation among high school students in New York was 10.1 percent in 2000 and 13.1 percent in 2002. Participation was 10.4 percent in the rest of the United States in 2000 and 11.7 percent in 2002. These differences are not statistically significant but are suggestive of a possible effect related to Reality Check that will be more closely examined as more data become available.

**Awareness of Antitobacco Media Messages.** As noted in Chapter 4, tobacco countermarketing campaigns can be an effective way to deliver antismoking messages to youth. The 2002 YTS asked students about the number of times they had seen or heard antismoking commercials on television or radio in the past month. (The 2000 YTS combined these questions, so we do not present those results here because it is difficult to compare them to the 2002 results.) **Exhibits 6-83** and **6-84** present exposure to antismoking ads on television because television is by far the most frequently used means of delivering antismoking messages to youth.

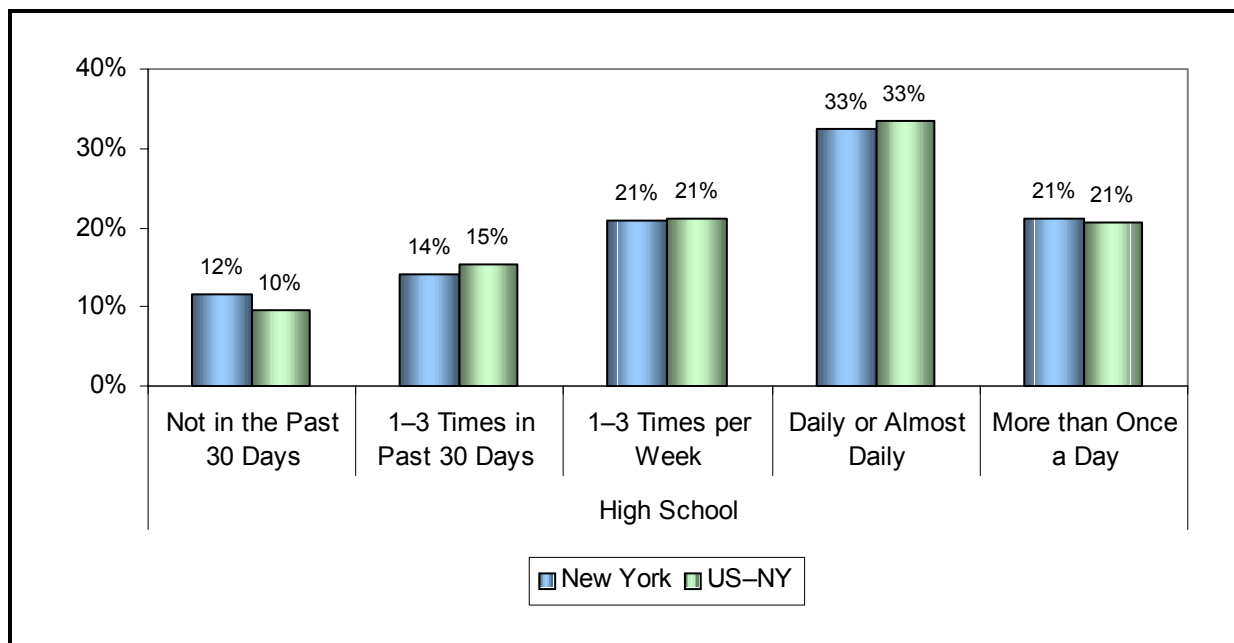
**Exhibit 6-82. Percentage of Students Who Participated in Community Events to Discourage their Peers from Using Cigarettes or Other Tobacco Products, 2000 and 2002 YTS and NYTS**



**Exhibit 6-83. Number of Times Middle School Students Saw Antismoking Ads on TV, 2002 YTS and NYTS**





**Exhibit 6-84. Number of Times High School Students Saw Antismoking Ads on TV, 2002 YTS and NYTS**

Among middle school students, 24.4 percent in New York and 23.1 percent in the rest of the United States saw a television ad more than once a day. Among high school students, 21.1 percent in New York and 20.6 percent in the rest of the United States saw a television ad more than once a day. However, there are no statistically significant differences between New York and the rest of the United States in exposure to antismoking messages on television. This suggests that the media campaign in New York has not brought about an increased level of awareness compared with the remaining United States.

#### 6.6.4 Discussion

We have reviewed the most currently available data on youth smoking behaviors and several of the elements of the NYTCP that could influence those behaviors. New York is similar to the rest of the United States with respect to the prevalence of youth smoking, youth access to tobacco, exposure to school and community programs, and awareness of antismoking messages. A bright spot for New York is that youth report

paying cigarette prices that are considerably higher than those in the rest of the United States.

Similarity between New York and the rest of the United States should not be interpreted as meaning that the NYTCP has been ineffective at reducing youth smoking. Similar to the results presented for adults, we did not expect large changes in youth smoking during the first 2 years of the program given the level of effort devoted to youth programs. As noted elsewhere, the strategy the NYTCP is taking toward youth smoking is one of social norm change, which is a gradual process. Therefore, it is not surprising that more significant differences were not found at this time. It should also be kept in mind that the data used for this analysis are from 2002. When more recent data become available, we will be better able to evaluate the numerous policy and program initiatives that occurred in 2003 and 2004.

Despite the focus on enforcement of the ATUPA youth access law since 1997, there appears to be no difference between New York and the rest of the United States with regard to ease of access to cigarettes by youth. The literature suggests some possible reasons for this. First, the current ATUPA statute requires only one compliance check per merchant per year (plus two reinspections per year until points are removed from the retail dealer's record), whereas the literature suggests that four to six compliance checks per merchant per year are necessary to achieve and maintain retailer compliance levels greater than 90 percent. Second, youth access enforcement does not occur in a vacuum. Support of the enforcement regimen through other program activities can increase its chances of success. Examples include educating retailers to the purpose of the law and its penalties, training programs for sales clerks, a coordinated media campaign designed to reduce the social acceptability of providing tobacco to youth, and actions by community coalitions to raise awareness and support for the law among police officers, political and business leaders, educators, judges, and parents.

### **6.6.5 Conclusions and Next Steps**

New York does not differ from the rest of the United States with respect to the prevalence of youth smoking, youth access to tobacco, exposure to school and community programs, and awareness of antismoking messages. These results indicate that New York had average declines in smoking during the first 2 years of the program.

Largely as a result of the large cigarette excise tax increases of 2000 and 2002, New York youth report paying cigarette prices that are considerably higher than those in the rest of the United States.

As other components of the NYTCP, such as the media campaign, Cessation Centers, and Community Partners, begin to affect changes in social norms around tobacco use, youth smoking will also be affected.

The evaluation team will undertake several activities over the next year to further the evaluation of youth smoking in New York:

- The 2004 wave of the YTS was recently completed. Once these data are available, they will provide information about changes in youth smoking outcomes over the past 2 years.
- We are fielding a youth cohort study in New York that tracks the same youth over several years. Longitudinal surveys of this type are the most powerful way to assess program exposure and behavior change in individuals.
- We plan to conduct detailed multivariate analyses of the YTS data from 2000, 2002, and 2004 (when they become available). Although less powerful than the longitudinal youth cohort study just described, these analyses are able to measure program exposure and behavior change at the population level. The analysis will account for multiple influences on youth smoking, including enforcement of ATUPA, state and national countermarketing media campaigns (including the American Legacy Foundation's "truth" campaign), cigarette taxes, tax evasion, and school and community programs.
- We will analyze data that are published in the Tobacco Enforcement Program annual reports to assess in more

detail the impact that ATUPA enforcement is having on youth smoking in New York.

- Increased monitoring of community-based activities by youth and adult, through the Community activity tracking, will also provide more insight into the potential impact of youth-led community-based activities.

# 7

# Summary and Conclusions

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## 7.1 OVERVIEW

This report is the first annual assessment of New York's Tobacco Control Program (NYTCP) by an independent evaluator pursuant to a statutory requirement contained in the 2000 Health Care Reform Act (§1399-jj). This statute focuses on several key elements of the evaluation. First, it notes that the principal measures of effectiveness are negative attitudes toward tobacco use and reductions in tobacco use. Second, it indicates that the purpose of this evaluation is to direct the most efficient allocation of state resources for the tobacco control program. Finally, it stresses that the evaluation must be built on sound evaluation principles.

In this first report, we present a summary of RTI's comprehensive program evaluation, which was built on sound evaluation principles and best practices for tobacco control research. We noted that because the program takes a comprehensive approach to tobacco control that relies on synergies across program interventions, it is difficult to precisely and reliably measure the effectiveness of individual interventions. For example, one issue we confront head on in this report is the role of increases in cigarette excise taxes. Comprehensive tobacco control programs promote increasing cigarette excise taxes as an effective means to reduce tobacco use. Although one can credit the program for creating an environment where the public supports higher taxes, it is difficult to assess the extent to which the program's efforts

have encouraged the passage of increased excise taxes. As a result, it is unclear how to attribute changes in tobacco use that result from tax increases to the program.

It is also important to note that the evaluation began several years after the program began in 2000 and over a decade after tobacco control programs began in earnest in New York State. This necessitates piecing together evaluation data available prior to implementation of the evaluation contract, while moving forward with the development of a more robust evaluation infrastructure. The current report reflects a blended approach that (1) makes use of existing surveillance systems to look back at the potential impact of the program during its early years and (2) presents new and comprehensive data against which to measure future performance. The latter will better enable the program to more effectively speak to the statutory requirement for the evaluation to “direct the most efficient allocation of state resources.”

This report focuses on describing the context within which the program is operating by highlighting the health and economic burden of tobacco as well as pro-tobacco influences, such as \$830 million in annual tobacco industry expenditures for tobacco promotions and advertising in New York (Chapter 2). Within this context, we (1) assess the strengths and weaknesses of the program’s strategic approach to reducing the health and economic burden of tobacco in New York (Chapter 4), (2) provide an overview of the status of the evaluation (Chapter 5), and (3) evaluate the program’s progress toward stated program goals with the available surveillance and evaluation data (Chapter 6). In this chapter, we summarize the main points of the report, draw conclusions, and point out next steps for the evaluation.

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## **7.2 NEW YORK TOBACCO CONTROL HISTORY AND CONTEXT**

Tobacco use remains the leading cause of preventable deaths in the United States, taking more than 440,000 lives prematurely; 25,000 of these are in New York. In addition, more than 500,000 New Yorkers currently struggle with smoking-related diseases (Hyland et al., 2003). Tobacco also takes a toll on

New York economically. Estimates from 1998 indicate that the total economic burden in New York exceeded \$11.7 billion (CDC, 2002a): \$6.4 billion in medical costs and \$5.3 billion in productivity losses. This translates to a cost of \$9.82 per pack of cigarettes. Even though New York has a relatively high tax on cigarettes (\$1.89 statewide and \$3.39 in New York City, including the federal tax of \$0.39), the tax falls short of the true costs of smoking.

New York began in earnest to reduce the health and economic costs of smoking starting in 1991 with the American Stop Smoking Intervention Trial (ASSIST). However, from 1991 to 1999, New York spent approximately 18 cents per person annually (adjusted for inflation). In 2000, 2001, and 2002, New York spent \$0.62, \$1.70, and \$2.06 per person on tobacco control, respectively—a dramatic increase over previous levels (adjusted for inflation).

To put that in context, the most recently available estimates indicate that tobacco marketing and promotions amounted to \$830 million in New York or \$43 per person in 2002. These activities translate to significant point-of-purchase advertising and promotions such as cents off coupons and buy-one-get-one-free offers that erode the impact of cigarette tax increases. Finally, smoking is promoted by more indirect methods, such as smoking in the movies. We point out that although smoking rates have declined since the 1950s, the amount of smoking portrayed in movies has not declined in a parallel fashion.

Although the tobacco control program is outspent by the tobacco industry, it can use the full range of mass media options to discourage tobacco use. Hence, relatively smaller investments in tobacco control may have a larger effect (dollar for dollar) on tobacco use than tobacco promotions. Research has consistently shown that investments in tobacco control lead to reduced tobacco use. In particular, comprehensive or “multifaceted” programs have repeatedly been shown to reduce tobacco use prevalence at the state level (USDHHS, 2000).

Finally, to understand how New York’s investments in tobacco control compares with other states, we examine data on state funding for tobacco control from 2000 to 2004. These data

show that NYTCP's average funding ranked 28th among states over this time period—therefore, we might expect trends in tobacco use over this time frame to be no better and no worse than other states on average.

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### **7.3 PROGRAM STRATEGY AND IMPLEMENTATION**

Although the increase in funding certainly is a boon to tobacco control, it should be recognized that even under ideal circumstances, funding does not equate instantaneously into capacity to implement effective tobacco control—staff need to be hired to direct and manage the program; strategic plans need to be created; procurements need to be developed, approved, and released; contracts need to be executed; and so on. With the exception of Florida's Tobacco Control Program, which quickly mounted an effective media campaign, it has taken several years for comprehensive state tobacco control programs to have an impact on tobacco use, above and beyond excise tax increases that in many cases help fund the program.

In the case of New York State, this point is illustrated by the fact that it was not until November 2001 that the program was able to hire the current director after a national search. In spring 2002, the program began a strategic planning process that has begun to come to fruition this year with the release of new procurements and subsequent contracts for the Quitline, Cessation Centers, and the Community Coalitions.

The process of establishing a new direction for the program and corresponding new contracts takes time both because of preexisting commitments and a procurement process from start to finish that is slowed considerably by what one stakeholder referred to as a "bureaucratic quagmire." A state audit also has pointed to delays in the contracting process. These slowdowns are also one source of the consistent gap we found between program funding and expenditures. In the first year, the program spent 28 percent of the available resources, and in subsequent years they have spent approximately two-thirds to three-quarters of the available funds.



As a whole, the stakeholders have an optimistic outlook for many aspects of the program: they have high praise for the senior leadership of the NYTCP; they believe the program is solidly grounded on evidence-based interventions; and they believe that although funding for the program may be insufficient to get the job done, it is invested appropriately. Several stakeholders also noted their satisfaction that the program has continued to receive steady funding in times of difficult state budgets.

Our understanding of the literature also leads us to conclude that the program's strategic approach to use evidence-based interventions is very well-supported in the peer-reviewed literature and by federal guidelines and recommendations. The one exception is the legally mandated enforcement program. There is little support in the literature that the current enforcement efforts are sufficient to curb youth access to cigarettes and discourage youth smoking. However, the literature does not provide sufficient evidence to recommend increasing funding for this activity.

The stakeholders were not without criticisms for the program. Most of their comments centered on an ineffective countermarketing program. Many of the stakeholders believed that the program has a good plan but when it comes to countermarketing, it is not able to carry out the plan. Integrating the media campaign is critical not only for selecting appropriate messages but also for coordinating with other aspects of the program, since the evidence supports countermarketing efforts combined with other interventions.

With respect to the countermarketing campaign, both the stakeholders and our own review of the existing literature suggest that the program is missing an opportunity to have a large impact on program outcomes by consistently failing to implement media campaigns with messages that elicit strong emotional responses. The stakeholders suggest that the ad approval process leads to ineffective, "low impact" ads.

## **7.4 EVALUATION FINDINGS**

We conducted a number of analyses with the purpose of understanding whether the NYTCP had a greater than average impact on tobacco use behaviors in the period from 2000 to 2002/2003. This was accomplished by comparing trends between New York and the rest of the United States for cigarette sales, the prevalence of smoking, and a number of cessation behaviors prior to and following 2000. The data are limited to this time period due to the lack of data from other states after 2002/2003. In light of the inherent challenges to establishing and mounting a comprehensive tobacco control program and the lengthy procurement and contracting process, we did not expect to find evidence that the program's efforts had an impact on these outcomes by 2002 or 2003.

We did find some evidence that trends in these outcomes were more favorable in New York than in the remaining United States. Overall, we found the following:

- Declines in cigarette consumption and tax-paid sales accelerated in New York after 2000 compared with the rest of the United States.
  - This acceleration of the sales trend was due in part to excise tax increases, which prompted some smokers to cut down or quit and others to purchase untaxed cigarettes.
  - Estimated cigarette consumption was 52 percent lower in 2003 than it would have been if New York State and New York City cigarette excise taxes remained at 1999 levels.
  - According to the ATS, purchasing cigarettes from tax-free or lower tax venues is commonplace—on average 58 percent of smokers report buying from sources that would not be reflected in New York's tax-paid sales. This ranged from a high of 88 percent in the Buffalo area to a low of 42 percent in the Hudson Valley.
  - Some of the changes attributable to the tax could fairly be attributed to the program since the program fosters an environment that promotes public support for such policy changes.
- The prevalence of smoking was 1.3 percentage points lower in 2002 than it would have been in the absence of

the 2000 excise tax increase, translating to 187,791 fewer smokers.

- Results from similar analyses focusing on cessation behaviors provide some consistent data to support the changes in tobacco use noted above, such as an increase in sustained quit attempts in New York relative to the rest of the United States. However, some of the other measures show no differences:
  - The trend in quit attempts in New York is similar to the remaining United States from 1992 to 2002.
  - Trends in the percentage of smokers who had a quit attempt that lasted more than 6 months increased after 2000 in New York and the rest of the United States at similar rates.
  - In New York, the percentage of smokers with plans to quit in the next 30 days was higher than in the rest of the United States, after 2000. This difference is largely explained by increases in cigarette excise taxes.
- In 2002, 7 percent of New York middle school students were current smokers, compared with 10 percent in the rest of the United States. Also in 2002, 21 percent of New York high school students were current smokers, compared with 23 percent in the rest of the United States.

As more recent data become available, we can revisit these analyses to draw more definitive conclusions about the impact of the program as it matures. More recent data may provide more insights into program impact and at a minimum may be able to identify the impact of the comprehensive Clean Indoor Air Act (CIAA). In addition, future analyses will use monthly, rather than annual, sales figures to better isolate the impact of policies and program efforts on cigarette consumption. Finally, we will work to get a better understanding of the volume of sales via the Internet and on American Indian reservations, sales that are not accounted for in the current cigarette sales analysis.

#### **7.4.1 Goal 1: Eliminate Exposure to Secondhand Smoke**

NYTCP efforts in this goal area have focused on reducing exposure to secondhand smoke in public and work places, as well as in private homes and cars. Strategies have included passing local ordinances banning smoking in indoor public and

work places and in parks, beaches, and recreation areas; educating community members on the dangers of exposure to secondhand smoke; and motivating people to make their homes and cars smoke-free.

With the enactment of the comprehensive CIAA on July 24, 2003, there has been a wide array of evaluation activities to understand the impact of the law, including studies that examine compliance with the law, attitudes toward the law, and the impact on individual's behavior (i.e., patronage of bars and restaurants after the law).

Findings for this goal area indicate that exposure to secondhand smoke has steadily declined in the home and in workplaces over the past decade. Based on attitudes about exposure to secondhand smoke, this change is welcomed by New Yorkers. From 1992 to 2002, New Yorkers' support for policies restricting smoking in public places, including bars and restaurants, steadily increased. This finding is bolstered by results that indicate a high level of public support for New York's CIAA—support considerably higher than what one might have predicted based on the 1992 to 2002 trends.

Our findings indicate that although only 10 percent of workers report exposure to secondhand smoke, this level is higher than might be expected considering the comprehensive CIAA that prohibits smoking in virtually all workplaces. Further research is needed to explore where and why this exposure continues. Our research also indicates that exposure in homes and cars is now the primary source of exposure to secondhand smoke. Thus, programmatic efforts should increasingly focus on educating New Yorkers about the dangers of secondhand smoke to promote voluntary restrictions on smoking in homes and cars.

The comprehensive data presented on the impact of the CIAA across a wide range of studies indicate that 1 year after implementation, the law has been a success. Compliance with the law was rapid and is now nearly complete, with the exception of bars, bingo halls, and selected other workplaces that need to be identified, which lag behind other hospitality venues. Support for the law is high and steadily increasing

among New Yorkers. The law has resulted in lower exposure to secondhand smoke among hospitality workers, and this lower exposure is beginning to positively impact workers' health. Self-reported patronage of bars and restaurants suggests that there may have been a slight positive benefit to businesses as a result of the law. Early data on hospitality sector employment, alcohol excise taxes, and bar licenses all indicate that the CIAA overall had no adverse effects on the hospitality industry. Results across the various studies triangulate these findings, leading to a consistent pattern of positive effects. Unfortunately, from March to November of 2003, the program's media campaign was off the air. This was an historic opportunity to support the CIAA with media and to take advantage of a period of time when interest in cessation and secondhand smoke may have been above normal as a result of the new law. The distribution of free nicotine replacement therapy (NRT) (through a collaboration between the New York City Department of Health and the NYTCP) around the implementation of the law may have further encouraged successful cessation attempts by smokers in New York.

Future evaluation efforts germane to the CIAA should focus on continued monitoring on compliance, especially in bars where compliance lags behind other venues and in other workplaces where 10 percent of workers continue to be exposed to secondhand smoke. We need to complete our research by examining sales tax data to more fully understand the impact of the CIAA on businesses that may be potentially affected (positively or negatively), such as bars and restaurants. Finally, a closer examination of the potential impact of the law on health outcomes is warranted.

Because exposure to secondhand smoke is now greatest in private homes and cars, research should explore the factors associated with voluntary restrictions on smoking in these settings to better understand how the program can engage in activities that promote these restrictions. Countermarketing efforts are one such strategy to promote these restrictions as well as to increase New Yorkers' understanding of the health risks associated with exposure to secondhand smoke. Our data suggest that New Yorkers do not fully understand all of the

risks associated with exposure to secondhand smoke, especially as they relate to heart disease and sudden infant death syndrome.

#### **7.4.2 Goal 2: Decrease the Social Acceptability of Tobacco Use**

The purpose of goal 2 is to decrease the social acceptability of tobacco use. The program aims to do this by increasing antitobacco attitudes and reducing tobacco promotions and marketing. With respect to the latter set of activities, the bulk of these activities have been implemented by the Youth Action Programs. These community partners have focused actions broadly on denormalizing and deglamorizing tobacco use and educating peers and community members about the manipulative marketing practices of the tobacco industry. More specifically, youth partners have used media advocacy and community action strategies to raise awareness of and change attitudes about smoking in movies and the impact of portrayals of smoking in movies on youth initiation of tobacco use. As part of the newly awarded community contracts, new efforts will be made to reduce tobacco company advertising and promotion in a variety of media, including movies, magazines, at the point of sale (in retail stores), and through event sponsorship and corporate giving. These activities are planned to begin in January 2005. As a result, the related surveillance and evaluation activities serve as a baseline against which to measure the progress of these planned efforts and the continuing efforts of the Smokefree Movie initiative. Although we cannot draw conclusions about program performance or program impact from our current research and evaluation on this topic, we note that several attitudes, including the high degree of support for eliminating smoking in movies rated G, PG, and PG-13, are consistent with the messaging and community action implemented by Youth Action Partners.

In the absence of an integrated statewide media campaign and a cogent media plan that supports other program activities and includes evidence-based media message strategies, the program will face challenges in achieving sufficient exposure to media messages and making significant progress in reducing the social acceptability of tobacco use. The lack of a strong statewide media campaign will only be partially offset by

Community Partner investment in media campaigns to change social norms. We are in the process of refining our evaluation to better capture awareness and impact of these local efforts. Findings indicate that only one-third of New Yorkers recall seeing any the program's eight statewide campaign advertisements in the second quarter of 2004, suggesting either that the program needs to increase its efforts and/or deliver messages that are more memorable and salient. We recommend setting a target level of awareness of at least one advertisement to 60 percent. However, those who did recall the messages had a favorable response—one in four spoke to others after seeing the advertisements, and more than 90 percent agreed that the advertisements said something important to them.

To maximize the impact of the mass media campaign, the program should develop and implement a long-term media campaign strategy that aligns the media messages with the goals and objectives of the program. This plan should articulate message "platforms" that are designed to coordinate with other aspects of the program, such as driving traffic to the Quitline with effective messages that encourage cessation, advertisements that support the CIAA and encourage more restrictions on smoking in the home, and ads that are salient to youth and young adults and thus discourage the uptake of smoking. As one stakeholder put it:

*"...the countermarketing campaign has been timid in the kinds of messages allowed to be put out. There is low penetration and the messages are ineffectual. Countermarketing provides vital support to everything, but here, it's AWOL. It has in no way been coordinated with other program activities."*

The U.S. Public Health Service has found strong support for the effectiveness of media campaigns, in combination with other interventions, and CDC's Office on Smoking and Health has made them a central and critical feature of a comprehensive tobacco control program. The absence of an aggressive, well-coordinated media campaign in New York is conspicuous and in stark contrast with best practices. When one considers the

\$830 million that the tobacco industry spends annually on tobacco advertising and promotion in New York, it is necessary for the program to use the power of mass media to effectively and efficiently reach the public with compelling and salient information about the death toll of tobacco and the resources available to those who want to quit.

In addition to a relatively low level of awareness of specific NYTCP advertisements, we found that only half of adults recall hearing or seeing messages about “places to get help in quitting.” This suggests that additional activities are needed to promote the Quitline and other services for smokers who want to quit.

In contrast, we found that tobacco marketing and promotional efforts are widespread and reach both youth and adults. For example, 40 percent of adult smokers received free gifts or special offers, 50 percent received a special price offer, and 30 percent received a promotional mailing. Youth are also consistently exposed to tobacco-promoting influences. More than half of middle and high school students report frequently seeing smoking in the movies, and 70 percent indicate frequently being exposed to advertising in retail outlets.

These sobering statistics indicate that the estimated \$830 million spent on tobacco advertising and promotions in New York annually is having its intended effect. These facts also serve as a reminder that the NYTCP's efforts need to be evaluated accounting for the influence of well-funded tobacco-promoting influences.

Our data also highlight a number of knowledge deficits that the program should work to correct. For example, adult New Yorkers' understanding of the health risks of tobacco and specific tobacco products such as light cigarettes can be significantly improved. For example, 29 percent of adults indicate that there is little benefit to quitting for smokers who have smoked a pack of cigarettes a day for 20 years, when in fact there are benefits. In addition, smoking and nonsmoking adults alike greatly overstate the benefits of low tar or light cigarettes. Finally, nearly one in four New York adults fail to recognize that smoking increases the risk of lung cancer.



Among middle and high school students, awareness of the health risks of smoking is high, but 15 to 18 percent of youth find smoking to be socially desirable. The program should address these significant knowledge deficits and misperceptions with prominent countermarketing efforts with advertisements created consistent with best practices.

Our findings also indicate widespread support (70 percent) among adults for not allowing smoking in movies rated G, PG, and PG-13, and nearly two-thirds believe that smoking in the movies encourages youth smoking. Previously, we indicated that although the prevalence of smoking has declined dramatically in the United States over the past 60 years, portrayals of smoking in the movies have not. This is a potential area of focus for media campaign messages to complement current community mobilization efforts in this area.

In total, these findings suggest that to effectively combat the influence of smoking in the movies and ubiquitous tobacco marketing and promotions and to correct gaps in knowledge and attitudes, the program needs to invest more aggressively in countermarketing and other interventions. In addition, the effectiveness of the existing efforts needs to be improved so that New Yorkers find the messages salient and memorable. Some examples of these additional efforts may include drawing attention to the disconnect between the amount of smoking in the movies and actual smoking rates among the general population, correcting smokers' beliefs about the benefits of low tar cigarettes, further highlighting the health risks of tobacco, and seeking out opportunities to curb tobacco marketing and promotions.

Countermarketing efforts should include messages consistent with best practices and should be planned far enough in advance to permit coordination with other program efforts, such as community mobilization. Longer-term planning for countermarketing efforts will also aid the evaluation because it will permit us to modify the Adult Tobacco Survey (ATS) and other surveys to include knowledge and attitude questions that are consistent with the targeted media messages.

From the standpoint of the evaluation, we will continue to monitor the measures presented in this section to measure NYTCP progress toward stated objectives. These main findings for this goal area are summarized below.

With respect to knowledge of the health risks of smoking and tobacco products:

- Although the following facts should be universally recognized, approximately one-fourth of New York smokers do not accept that their risk of lung cancer is higher than for nonsmokers.
- Twenty-nine percent of New Yorkers think there is little benefit to quitting for smokers who have smoked a pack a day for 20 years, in contrast to the facts.
- A significant number of smokers have misconceptions about light cigarettes and the dangers of nicotine.
  - Fifty-seven percent of smokers incorrectly believe that high tar cigarettes are at least twice as likely to cause illness as low tar cigarettes.
  - Nearly half of smokers see a benefit to smoking light cigarettes.
  - Both of these findings are in contrast to evidence that indicates there are no health benefits to low tar cigarettes.
  - Seventy-three percent of smokers incorrectly believe that nicotine causes cancer.
- Fortunately, only 3 percent of youth fail to recognize the dangers of smoking, but 15 to 18 percent think that smoking is socially desirable.

In terms of tobacco marketing, cigarette companies prove their ingenuity by effectively reaching New Yorkers in diverse ways with advertising and promotions:

- In the past month, 40 percent of smokers received free gifts or special discount offers, and about 13 percent received free sample cigarettes.
- About 50 percent of smokers received special price offers, and 30 percent received a promotional mailing.
- Eighteen percent of smokers reported receiving clothing with cigarette logos or brand names, even though these are a violation of the Master Settlement Agreement (MSA).

- In a post-MSA era where tobacco advertising and marketing is restrained and branded tobacco items are not permitted, youth are bombarded with smoking advertising, marketing, and imagery.
- Approximately 45 percent of middle school and 35 percent of high school smokers report receiving or buying a branded tobacco item in the past 12 months.
- Many nonsmoking teens are open to these branded items: 17 percent and 23 percent of nonsmoking middle and high school students, respectively, indicate that they use or wear a tobacco branded item.
- Youth are also frequently exposed to a significant amount of advertising in newspapers and magazines (approximately 40 percent) and retail outlets (more than 70 percent).
- Finally, more than 50 percent of middle and high school students report frequently seeing smoking in the movies.

With respect to efforts to combat the influence of pro-tobacco marketing, we found that youth are consistently exposed to antitobacco messages, while only one-third of New Yorkers were aware of the program's mass media campaign messages.

- Adults recall seeing or hearing a wide range of antitobacco messages in the past month.
  - Messages pertaining to products to help people quit smoking (79 percent) are the most commonly recalled, followed by the dangers of smoking during pregnancy (71 percent).
  - Talking to your kids about not smoking (66 percent) and the dangers of youth being exposed to secondhand smoke (62 percent) are also common.
  - Just over half (51 percent) recall messages about "places to get help in quitting," which could pertain to ads for the Quitline.
  - Just under half of New Yorkers report seeing or hearing ads about losing a loved one due to tobacco.
- Turning to specific awareness of NYTCP sponsored messages:
  - One-third of New Yorkers recall seeing one of the eight advertisements that aired in the second quarter of 2004. We recommend that the program set a goal of increasing awareness to 60 percent.

- Ninety-four percent of those who saw the advertisements agreed or strongly agreed that they said something important to them.
- One in four who saw the advertisements spoke to others about not smoking after seeing the advertisements.
- Nearly half of middle and high school students reported seeing or hearing antitobacco messages almost daily or more.

The ATS asks adult New Yorkers their opinions about smoking in the movies. We found that New Yorkers are in favor of limiting the amount of smoking in movies:

- Nearly 70 percent of New Yorkers agree that smoking should not be allowed in movies rated G, PG, or PG-13.
- Approximately half of New Yorkers believe that movies with a lot of smoking should be rated R.
- Nearly two-thirds of all adults believe that smoking in the movies encourages youth smoking.

#### **7.4.3 Goal 3: Promote Cessation from Tobacco Use**

To achieve the overall goal of promoting cessation, the NYTCP is taking a multistrategy approach that includes encouraging health care providers' support for smoking cessation, increasing coverage of and support for treatment for nicotine dependence, and increasing access to cessation counseling and services through the Quitline. Specifically, the program's strategic plan calls for increasing the number of

- health care provider organizations that have a system in place to implement the U.S. Preventive Services Task Force (USPSTF) clinical guidelines for cessation,
- Medicaid recipients who access pharmacotherapy for smoking cessation through the Medicaid program,
- health plans that provide coverage of evidence-based treatment for nicotine dependence,
- non-Medicaid eligible low-income tobacco users who receive free or reduced-priced pharmacotherapy from the NYTCP to support a cessation attempt, and
- New Yorkers who have access to cessation counseling and services.

The NYTCP will increase implementation and use of tobacco use screening and assessment systems within health care provider

organizations by funding Cessation Centers across the state to provide training, technical assistance, and follow-up to health care provider organizations to implement these systems. The NYTCP will also develop a more systematic referral of patients from health care provider organizations to the New York State Smokers Quitline; the latter will add a responsibility for enhanced counseling of these patients.

Before the Cessation Centers' work gets under way in earnest, the evaluation team will complete baseline surveys of providers and provider organizations against which we can measure the impact of this new initiative. Again, this new structuring of the Cessation Centers has received kudos from NYTCP stakeholders. Currently, the ATS indicates that more than two-thirds of adults who had visited a doctor, nurse, or other health professional in the past year reported that their health provider asked if they smoked and (for smokers) advised them to quit.

The NYTCP will work to increase the use of pharmacotherapy among Medicaid recipients who smoke by promoting the Medicaid benefit directly and through Community Partners; the Quitline; local pharmacies; and numerous state, regional, and local agencies.

The NYTCP will work with the New York Health Plan Association and other health insurance plans to increase coverage for cessation services and support, including pharmacotherapy, as a covered benefit. Finally, the NYTCP will develop several strategies to more effectively promote the Quitline.

Community Partners will use media and other promotional materials to increase local awareness of cessation service availability for various categories of potential users. Community Partners will continue to maintain and disseminate updated local cessation service directories.

The New York State Quitline has been a core part of this strategy since January 2000, when the program began. Our review found that the Quitline call volume has steadily increased over the years, as has its services. In addition, customer satisfaction surveys report high levels of satisfaction.

Starting soon, the Quitline will begin yet another service—it will offer NRT starter kits and provide one scheduled counseling call to eligible smokers ready to quit. The Quitline anticipates providing these services to 40,000 smokers over the next 12 months. This enhancement has been praised by several of the stakeholders we interviewed. What appears to be needed is greater promotion of the Quitline:

- Approximately 57 percent of current smokers and approximately 45 percent of all adults have heard of the Quitline. Use of the Quitline is considerably lower, in the 3 to 6 percent range (for smokers overall, Medicaid recipients, and the non-Medicaid poor).
- Television is the most common medium through which adults have heard of the Quitline (by a large margin).
- More than 50 percent of adults have seen or heard advertisements about places to call to get help in quitting smoking.
- Higher percentages of adults have heard or seen advertisements about products (such as nicotine patches or gum) to help people quit smoking.

We have not yet been able to assess other aspects of the program's efforts to promote cessation, such as increasing the use of pharmacotherapy among Medicaid recipients who smoke or encouraging health insurers to offer cessation services and support, including pharmacotherapy, as a covered benefit. With respect to the Medicaid population, our data indicate the following:

- Although more Medicaid recipients reporting having made a quit attempt in the past 12 months than non-Medicaid eligible poor adults and all adults taken together, Medicaid recipients were less successful in maintaining quit attempts.
- A much higher percentage (nearly 75 percent) of Medicaid recipients report insurance coverage of quit medications than do non-Medicaid eligible poor and adults overall. Overall and for the non-Medicaid eligible poor, less than one-third of adults report having insurance coverage for free nicotine patches or free quit medications community programs.

Overall, a number of other findings are encouraging for the NYTCP in terms of reaching cessation objectives and goals:

- Nearly one-fourth of New York smokers report using NRT or other medications as a cessation strategy.
- Approximately 15 percent of adults reported receiving free nicotine patches from community programs. Also, approximately 7 percent of adults reported receiving free quit medications from community programs.
- Approximately two-thirds of smokers report doctors and/or health professionals asking if the respondent smokes.

These results provide evidence that substantial numbers of New Yorkers are being “reached” by program activities. This is a necessary step in the process of trying to achieve the objectives and goal of promoting cessation. However, we do not know what levels of awareness or exposure to program activities are necessary to achieve the desired objectives and goals of the program in terms of cessation. Certainly, we can not say that the levels we observe at this time are adequate for achieving program objectives and goals. Evidence does suggest that it takes time for such programs to work. Thus, at a minimum we will look to see that the current levels are maintained. In addition, though levels might be relatively high for some outcomes, in most cases there is still substantial room for increasing levels.

In addition, several results point to specific areas that need improvement if cessation objectives and goals are to be reached. For example, maintained quit attempts were significantly lower than the number of quit attempts—hardly surprising. However, it was also evident that substantial numbers of New York smokers are using cessation strategies that are not optimal or even counterproductive (e.g., switching to lights). Over time, we will look to program efforts to expand the availability of free or low cost NRT to the population and to better inform the population about effective cessation strategies through media messages, the Quitline, and community partners. Also, Medicaid recipients were less likely to be successful at maintaining a cessation attempt than other smokers (it appears that higher income is associated with success in maintaining a quit attempt). This result is important because smoking rates are higher in lower-income populations.

This result in a sense validates the emphasis the New York program is placing on low-income smokers.

While awareness of program related efforts might be relatively high (at this early stage of the program and compared to other states), it is still evident that there is much room to improve the reach of programs and activities that promote cessation. For example, increasing awareness and especially use of the Quitline should continue to be a focus of cessation-related efforts of the program. There is also still a need to continue efforts to increase the use of NRT, increase awareness of cessation-related media messages, increase insurance coverage for NRT, and increase employer support for cessation services for employees.

#### **7.4.4 Goal 4: Prevent the Initiation of Tobacco Use Among Youth and Young Adults**

To achieve the goal of preventing initiation, the program has identified several objectives—raising the price of cigarettes through statewide and local cigarette tax increases, increasing the statewide retailer compliance rate with the Adolescent Tobacco Use Prevention Act (ATUPA) youth access law, and increasing the number of jurisdictions with a high ATUPA compliance rate. In addition to these stated objectives, youth and young adult initiation is indirectly affected by activities aimed at other program goals. For example, parents' and adults' smoking sends a message to youth that smoking is normative and in turn encourages youth smoking. Therefore, efforts to prevent smoking in public places and to promote cessation combat the notion that smoking is normative, as do many other program efforts—curbing tobacco promotions and advertising and raising awareness of smoking in the movies, the arts, and elsewhere.

In this report, we have focused on historical changes in youth smoking and have examined potential influences on these changes, including state-funded efforts to enforce youth access laws. Future work will examine how the CIAA and more recent increases in cigarette prices have influenced youth smoking. The timing of the administration of the Youth Tobacco Surveys (YTS) was such that it was difficult to parse out the effect of recent cigarette excise tax increases on youth smoking. When



the 2004 YTS data become available, we will revisit our analyses.

As of 2002, rates of smoking in New York are similar to those in the rest of the United States:

- Seven percent of New York middle school students and 21 percent of high school students were current smokers, compared with 10 percent and 23 percent in the rest of the United States.

Despite several years of increased enforcement activity of youth access laws, New York youth are no more likely than youth in the rest of the United States to be asked for a proof of age while purchasing cigarettes or to be refused cigarettes because of age. In total, the evidence suggests that current efforts to enforce youth access laws may not be sufficient to curb youth access to cigarettes or to reduce youth tobacco use. The literature suggests that retailers need to be monitored four to six times per year, much more than the annual compliance checks currently in place. However, given the strength of the evidence, we do not recommend increasing funding for enforcement efforts.

With respect to other typical youth-directed interventions, we found the following:

- Self-reported cigarette prices in New York rose at a slightly faster rate between 2000 and 2002 than in the rest of the United States.
- More than one-third of middle school students and nearly one-fifth of high school students received a multistrategy smoking prevention program in school. Rates of participation did not differ between New York and the rest of the United States.
- In 2002, 21 percent of high school students and nearly 24 percent of middle school students saw an antismoking advertisement on TV more than once a day, although rates of exposure are no different between New York and the rest of the United States.

In light of these findings, it is not surprising that the prevalence of youth smoking did not decline faster in New York than in the rest of the United States.

## **7.5 CONCLUSIONS AND NEXT STEPS**

Based on our review and feedback from stakeholders from around the state, the NYTCP's programmatic approach to tobacco control is solidly based in evidence-based strategies and is consistent with best practices. The program's strategic planning process began in early 2002 and the fruits of that effort are beginning to take shape—the Quitline services have been expanded, new Cessation Centers are being established, and community mobilization efforts are better coordinated throughout the state. The stakeholders were consistently impressed with the senior NYTCP staff and the direction they have taken the program in recent years. It has been, however, a slow process of developing and releasing new procurements and subsequently executing new contracts awarded. Even under ideal circumstances, it does take time to translate monetary resources into effective tobacco control capacity, but it appears that the bureaucratic processes in New York have slowed this process further.

With respect to program funding, the NYTCP falls short of the CDC's minimum recommendation by roughly half. Overall, the program ranks in the middle of all states in terms of per capita funding levels. Compared to the estimated \$830 million invested in advertising and promotions by the tobacco industry and the ubiquitous portrayal of smoking in the movies, the program is vastly outspent by the tobacco industry. Stakeholders consistently call for more resources, yet several noted their appreciation of continued support during difficult state fiscal budgets.

Despite the strong strategic plans, the program is not without weaknesses. Our review and stakeholder feedback points to an ineffective countermarketing campaign that failed to coordinate media messages with the historic passage of the statewide CIAA in July 2003. The mass media campaign's messages are not consistent with best practices as they are low in emotional impact and appear to garner little attention among the public. In addition, there is no long-term media plan and no coordination with other aspects of the program. This is important because the literature indicates that countermarketing is effective when combined with other

interventions. Moving forward, the NYTCP should implement the media campaigns consistent with best practices and coordinated with other interventions and policy changes. In addition, the program should make use of more effective messages and should consider contracting with an advertising agency with a track record of producing high impact advertisements. To ensure that these efforts have their intended impact, we suggest that the program set a goal for awareness of NYTCP-sponsored advertisements of 60 percent.

Our evaluation to date has accomplished three main tasks. We established a baseline with the development of new surveillance and evaluation systems that will permit a stronger and more comprehensive evaluation next year. This baseline highlighted gaps in knowledge and areas where greater efforts are needed to promote awareness of program efforts. In addition, by partnering with Roswell Park Cancer Institute and cooperating with the NYTCP, we have successfully completed a comprehensive evaluation of the statewide CIAA that demonstrated that the law was implemented quickly and had its intended effects with no adverse effects on business noted to date. Finally, we examined changes in tobacco use indicators during the first 2 years of the program compared with the rest of the United States. As we noted earlier, given the time it takes to build effective capacity, we did not expect New York to outperform the rest of the United States. We found some evidence that tobacco use declined faster in New York by some measures than the rest of the United States and that these changes were attributable to increases in cigarette excise taxes. We also noted that the program's efforts to decrease the social acceptability of tobacco may be responsible for creating an environment where increases in cigarette taxes garner public support. Hence, some of the declines in New York are fairly attributable to the program although it is difficult to precisely measure its effect.

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